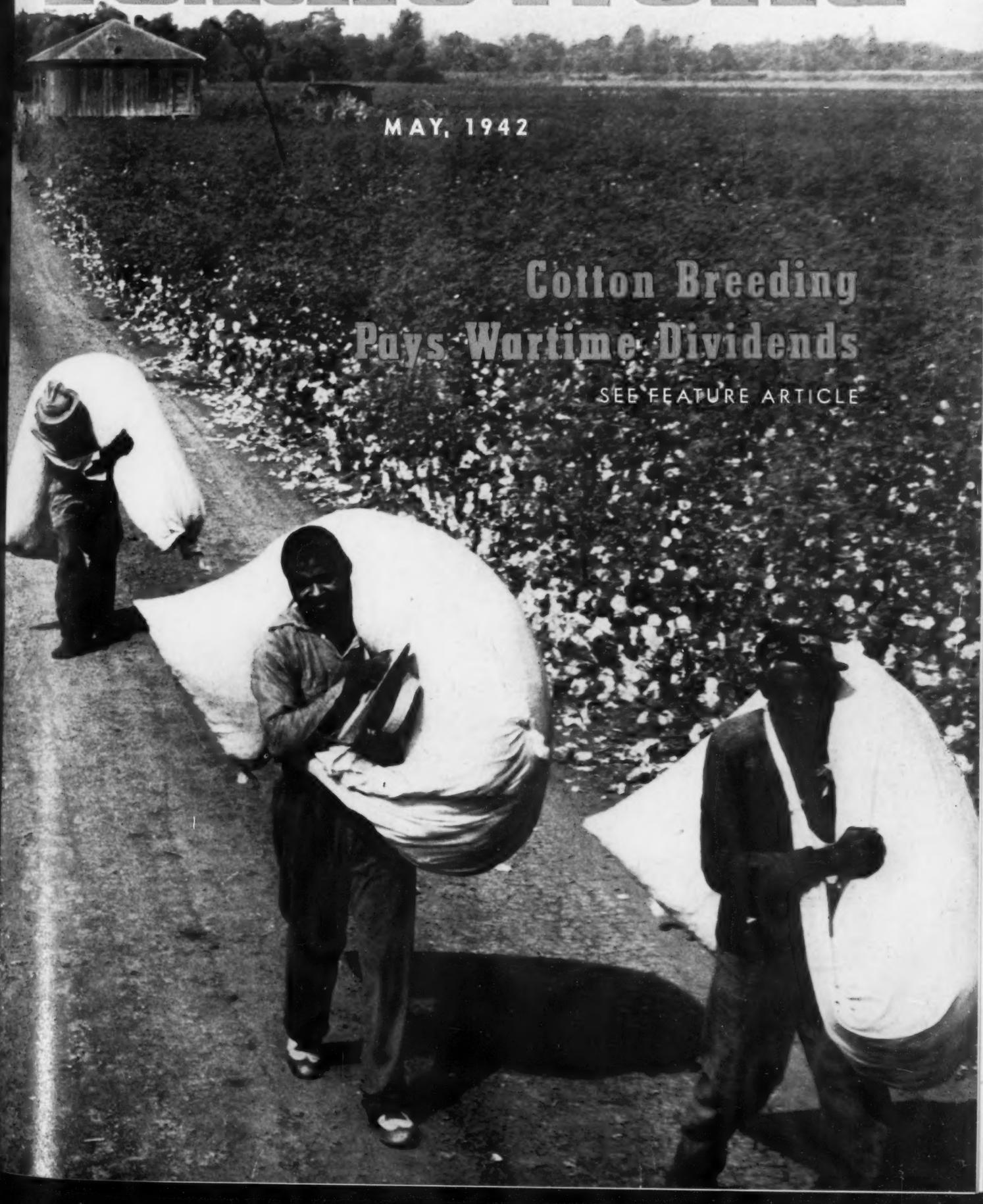
NOLOGY DEPT.

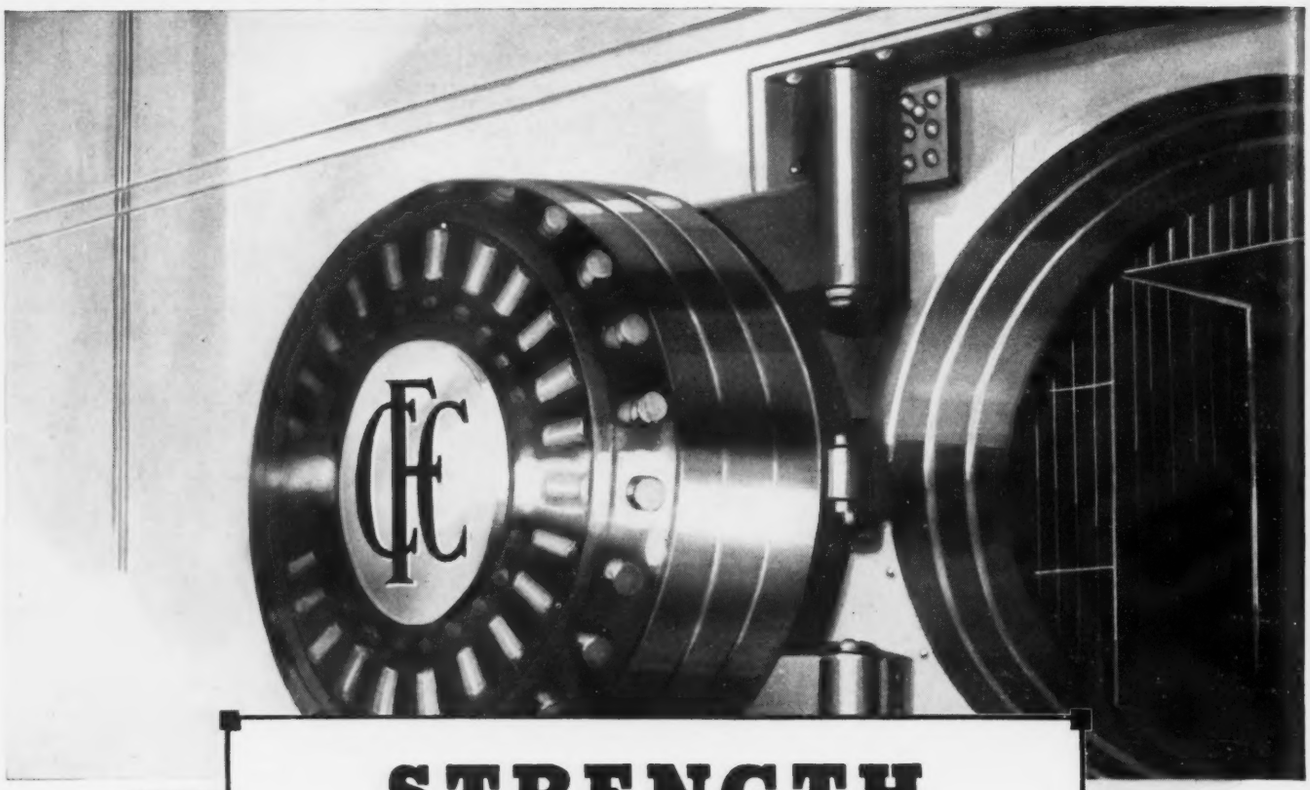
Textile World

MAY, 1942



Cotton Breeding Pays Wartime Dividends

SEE FEATURE ARTICLE



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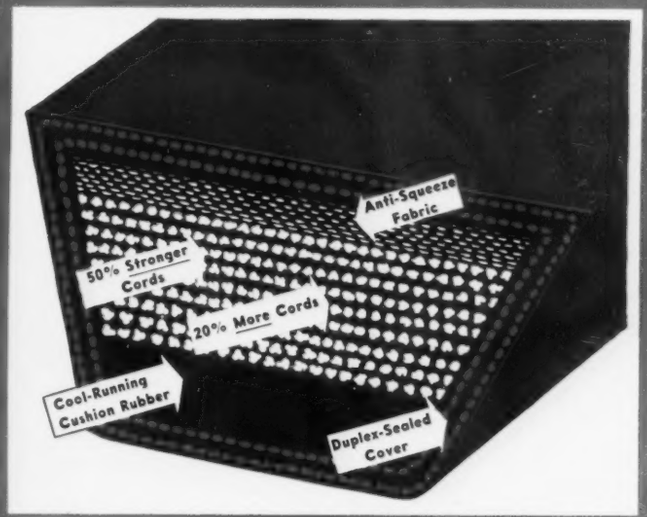

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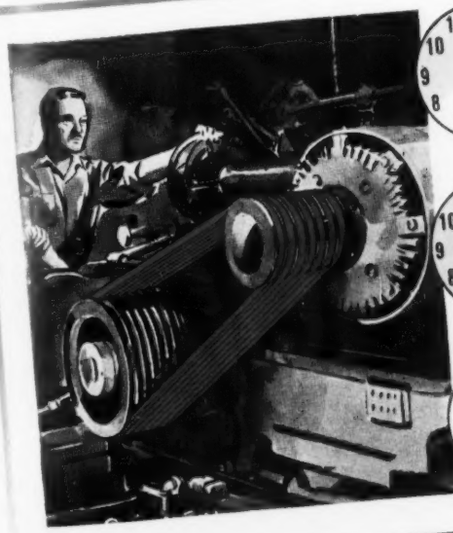

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Spooler Knots

Comments by Henry G. Lord

Back sometime in the nineties, a young man named Colman was visiting a town in the East where there was a cotton mill. He had never been in a cotton mill, so he asked permission to go through the mill and take a look around.

As he strolled through the various departments, he stopped in the spooling room to watch the spooler tenders deftly piecing up the broken ends by hand. He made some inquiries and found it very essential that the knots should be tied not only securely, but without long ends, otherwise there would be imperfections in the cloth. It required considerable training and knack to become a good spooler tender and tie a good weaver's knot.

I don't know how long after that I first heard of the Barber Spooler Knotter, a device invented by Mr. Colman after watching the spooler tenders tying knots by hand, and made by his company, Barber-Colman, a machine tool concern in Illinois, far from the eastern machinery and cotton manufacturing district.

It had been tried out in several mills and worked. It fastened on a girl's hand and one simple motion tied the knot and clipped the ends.

One day Mr. Colman dropped in to my office to show me the knotter and discuss one of their problems. The main obstacle they had found to introducing it was the objection of the spooler tenders to using the new gadget. The girls were afraid they couldn't earn so much money and they didn't want to be compelled to use it as they might lose their skill.

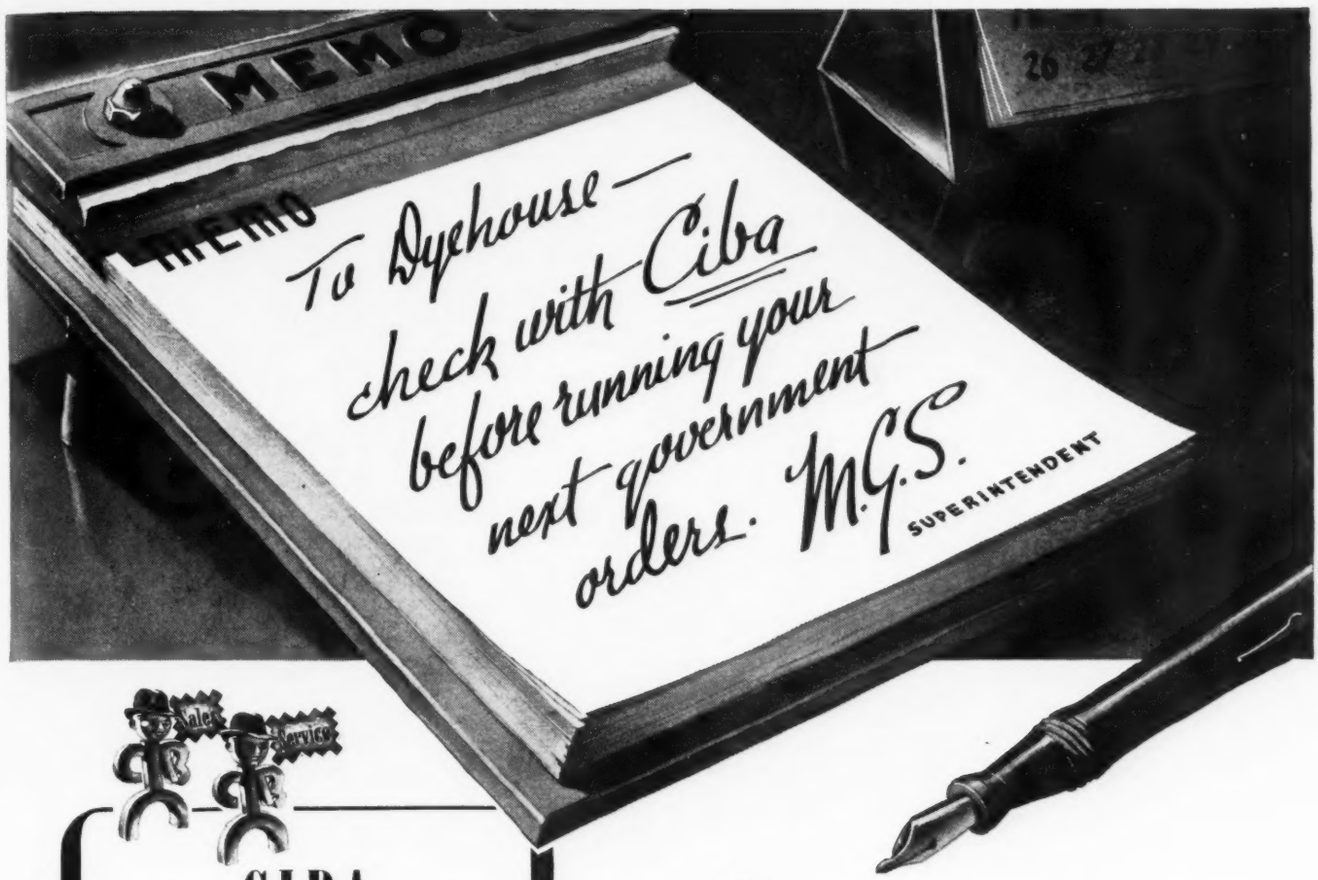
After considerable discussion, Mr. Colman and I worked out a plan which we got the Boott Mill (I think it was the Boott, but it might have been the Merrimack) to try out. As I remember, in that mill there were a few spoolers in a room apart from the others; the spooler tenders in that room were given bonuses to try out the knotters and guaranteed full wages to use them for two or three weeks until they become accustomed to them.

In a short time they not only became expert but enthusiastic, and then the rest of the spooler girls began to hear about it and to *ask* for the knotters. And when a spooler girl went to another mill, the first thing she asked for was a knotter. It was only a few years before practically all cotton mills were equipped with hand knotters. That little gadget has saved hundreds of thousands of hours in cloth inspector's time.

But that wasn't the end of the knotter's usefulness. If it hadn't been for the knotter, I doubt if the industry would have had the warp-tying-in machine. But that's another story.

It always seemed to me that the invention of the spooler knotter by a man who knew nothing of textile processes, but with a keen mind and quick perception, is a striking example of what a fresh reaction to an old accepted process will sometimes accomplish. Most of us are so accustomed to doing our jobs in the same old way that we don't recognize the possibility of there being a better way.

HENRY G. LORD, ***founder of Textile World and president, Bragdon, Lord & Nagle Division, McGraw-Hill Publishing Co.***



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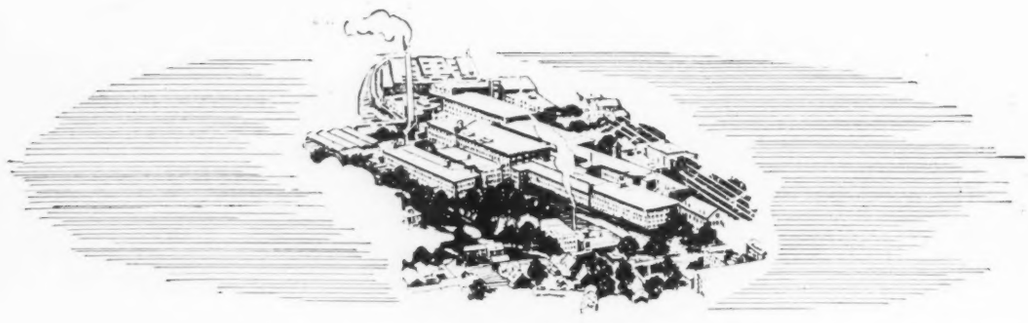
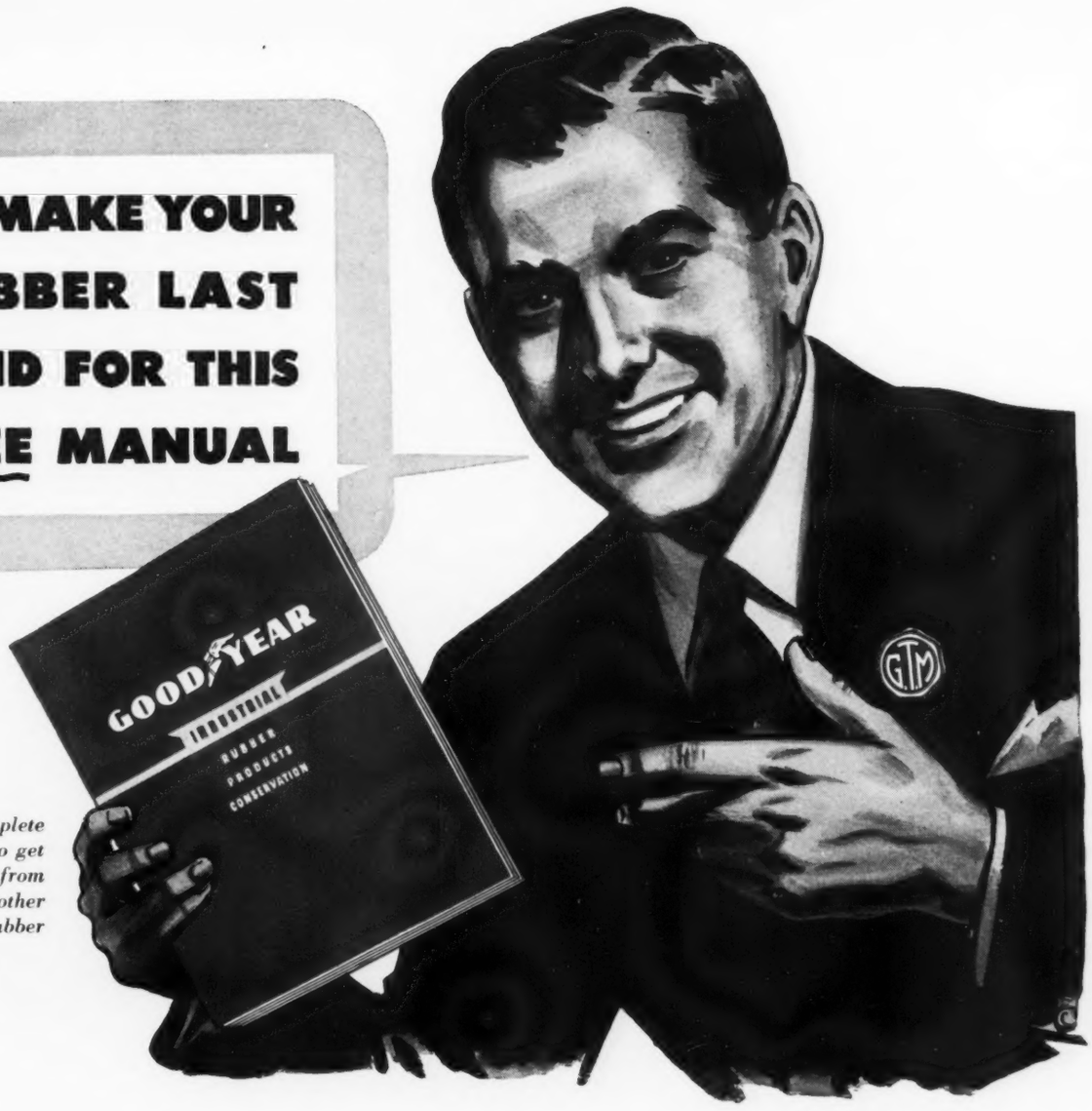


TO MAKE YOUR RUBBER LAST SEND FOR THIS FREE MANUAL



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1. Be sure the belt is engineered to the job. An under-belted drive wears out the belt before its time. Be sure to allow for proper safety factor.

2. Check the laps. Should they begin to give way, repair them with water-proof belt cement. Don't try to fix them by rivets or lacing.

3. Check the tension. Too tight a belt is hard on flexing fibers, hard on bearings. Too loose a belt won't pull the load efficiently.

4. Don't let shifters or step-cone pulleys rub belt edges, which would elongate one side.

5. Check pulley and shaft alignment. Don't run a belt that starts crooked. If it jumps off, find the reason.

6. Check the running direction. Single belts should have grain side next to pulley, with point of lap running away from pulley, rather than into it. Double belts should have inner lap pointing away from pulley, and outer lap pointing away from windage which is created by travel.

7. Nourish the belts by proper preservative. The tanner has compensated for nature's oils in the fibrous structure, but belts dry out eventually. Add a penetrating preservative that does more than merely dress the surface.

8. Watch your belt storage. Before storing away, clean your belts, cement loose edges or laps, and apply a preservative to both sides. Store them in a covered space, protected against dust and change of temperature. When putting belts into use again, give them another application of preservative.

9. Where belts are subject to frequent oil splash, as on machine tools, a water-and-oil-proof dressing should be applied to clean, degreased surface. It will prevent mineral oil from penetrating.

10. If it's a pivoted motor base drive, check the tension. Keep the pivot point located for most efficient tension.

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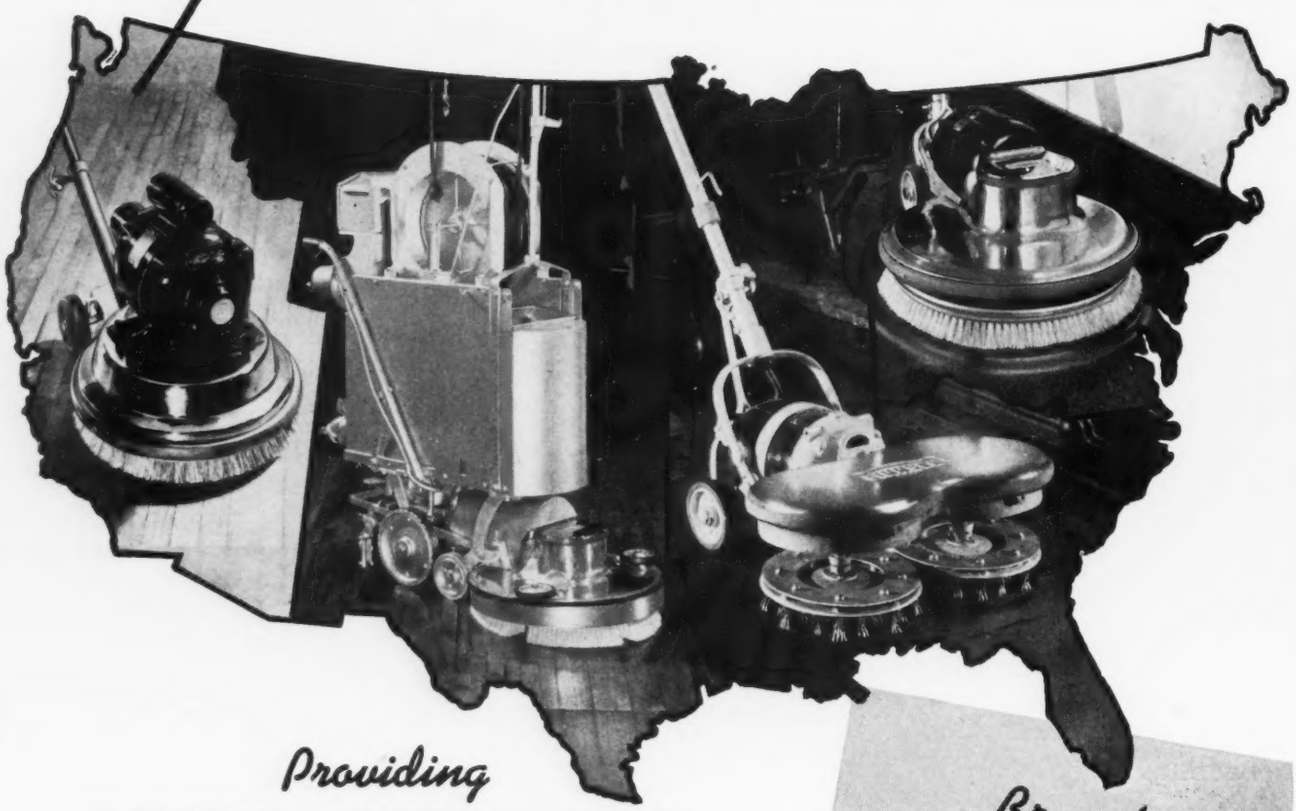

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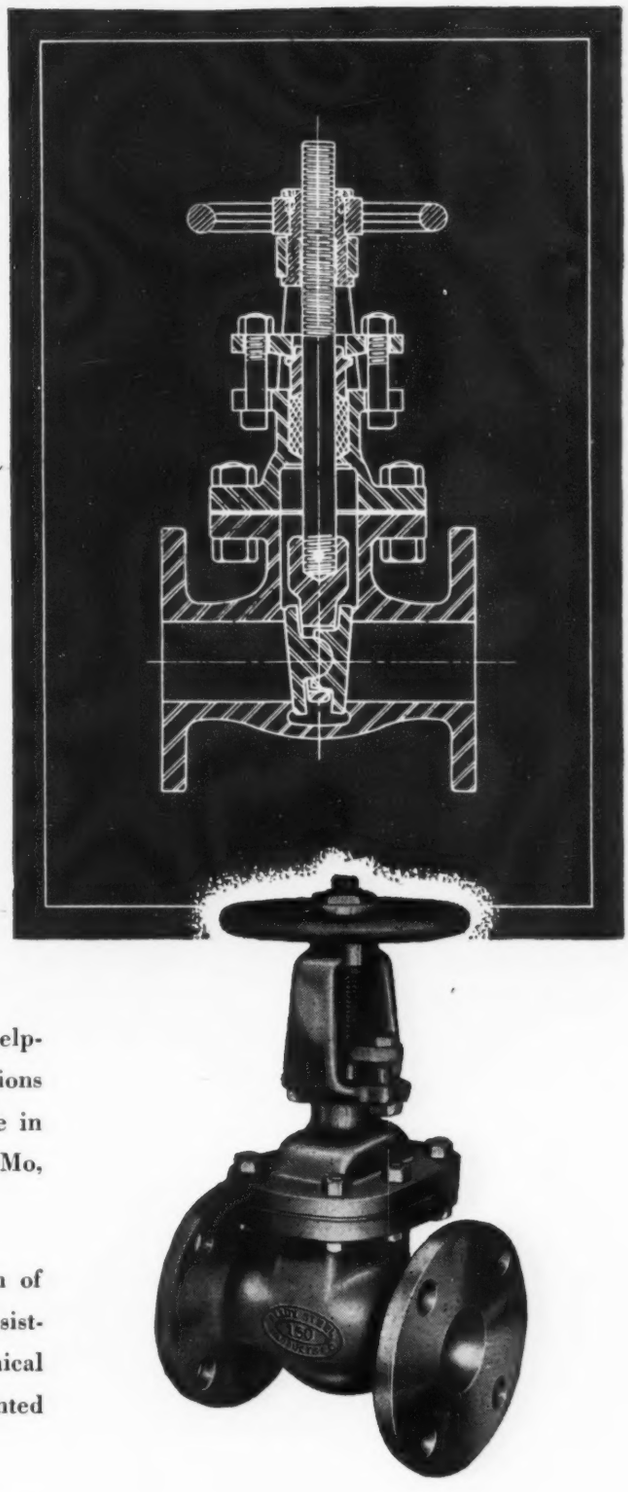

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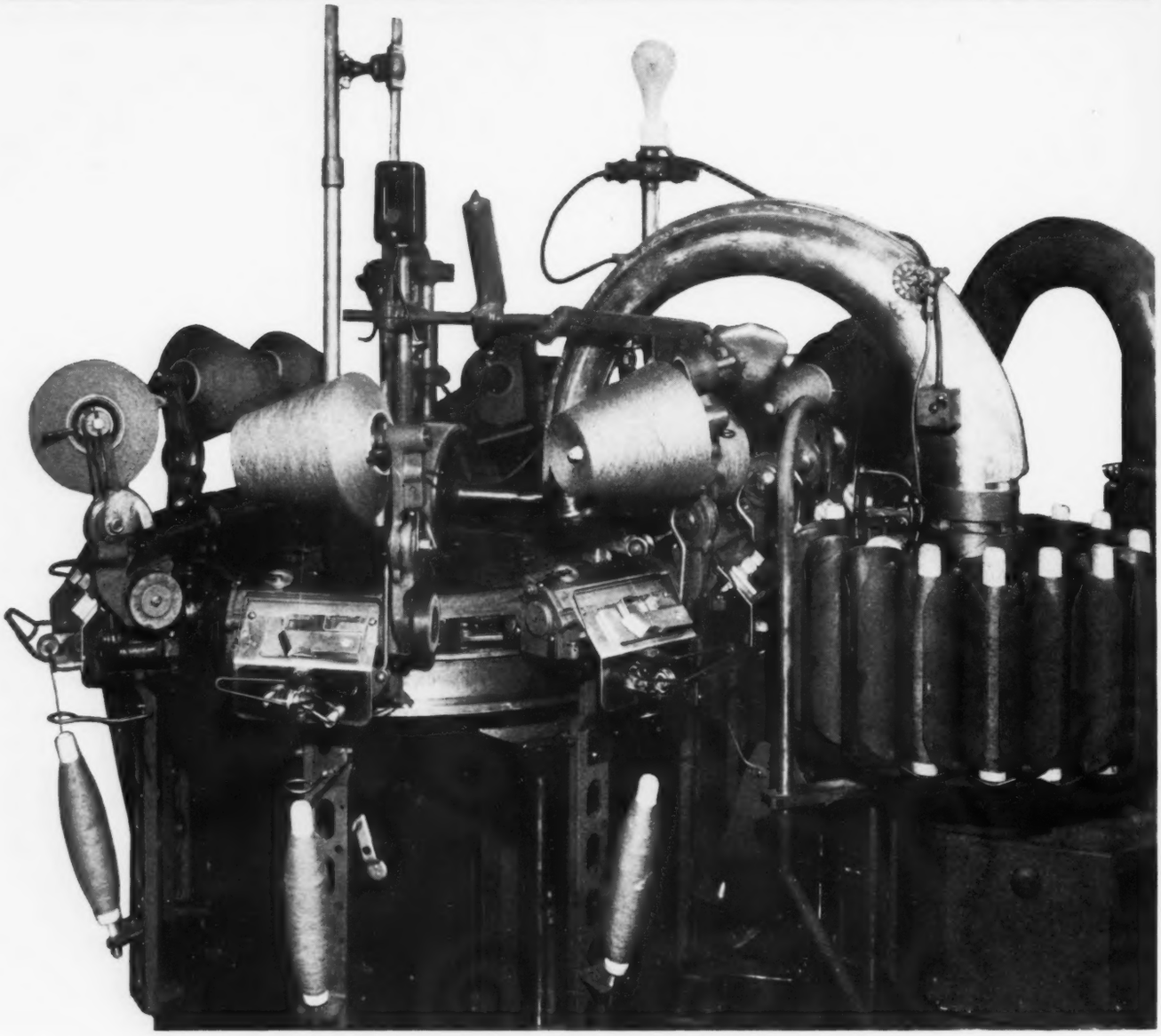

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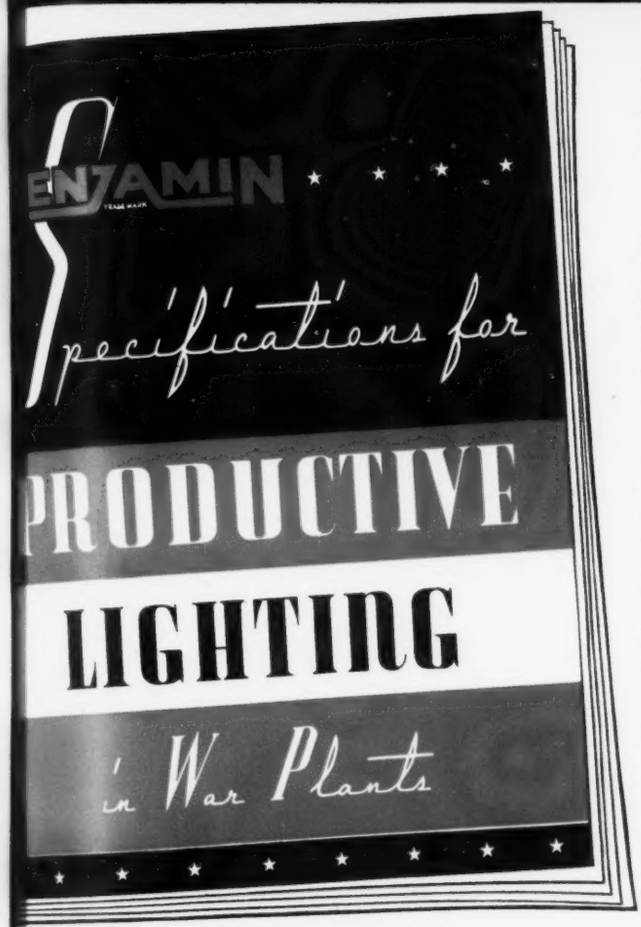
HOW TO USE LIGHTING IN YOUR WAR PRODUCTION DRIVE



Send for This Free Guide to Make Certain You Are Not Overlooking Important Lighting Factors Essential to a Smoother Flow of Increased Output.

Many are the production problems in which lighting is an important factor. For basic to all sustained and efficient production is the worker's ability to see quickly, to see accurately, and to see easily. The worker can do none of these things without good lighting.

Practical Solutions to Production Problems

This new War Edition contains complete data on how to approach, analyze and solve lighting problems. . . . How to analyze the seeing task and determine the lighting requirements. . . . Quick Reference Tables for determining the amount and kind of light required for each of the six major classifications of seeing tasks . . . also valuable data on Lighting as it relates to the problems of increased production, employee fatigue, accident reduction, greater utilization of floor space, 24 hour operation, increased prevalence of employees with deficient vision and controlled conditions plants.

Actual Usable Solutions of 21 Lighting Problems

From the many specific lighting problems submitted for solution to the Benjamin Engineering Staff, there have been selected for publication in this new book, the twenty-one problems most frequently encountered by INDUSTRY CONVERTING TO WAR PRODUCTION. The practical solutions of these problems are illustrated by means of diagrams and layouts. It is the purpose of these problem solutions to provide you with practical solutions of similar problems and to serve as guide in planning new lighting installations and relighting projects.

Authoritative . . . Factual . . . Written in Non-technical Language

This guide has been prepared to meet the pressing need for a reference book by the busy executive, plant man, and architect and all others interested in the use of lighting as a production tool. In its preparation, full use has been made of the successful experiences of the many plants using Benjamin lighting equipment as well as data from reports and publications of the Illuminating Engineering Society, RLM Standards Institute, The National Safety Council and the new "American Recommended Practice of Industrial Lighting" approved by the American Standards Association.

This Manual Brings You Up-to-Date Data on Use of Lighting as a Production Tool!

Contains pages on how to approach the lighting problem, how to analyze the seeing task, how to analyze the factors involved in proper equipment selection . . . also how to determine the proper amount of footcandles with special up-to-minute footcandle recommendation tables as guides.

Here are a few of the twenty-one problem solutions given in this Manual

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L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

•

ESTABLISHED 1840

The long Links-and-Links stocking is a source of new and potentially great profits. Mills producing this stocking owe it to themselves to take special care in the knitting. Torrington Needles are particularly effective in securing good knitting results in this type of merchandise—because of their exceptionally fine temper, finish, and overall accuracy, which are maintained by special machine methods of manufacturing and testing. Use Torringtons whenever fine workmanship is demanded.

TORRINGTON latch NEEDLES

The Torrington Company, Torrington, Conn., U. S. A., Established 1866 • Branches: New York • Philadelphia • Chicago • Boston • Greensboro, N. C. • St. Louis • Los Angeles • Toronto, Canada • Factories at: Torrington, Conn. • Orange, Mass. • Bedford, Quebec • Coventry, England

WHEN PROMPT DELIVERY COUNTS SO MUCH

NOW, when your products are so urgently needed, you can profit by the ready availability of the Torrington Needle Bearing. As a result of Torrington's expansion program, Needle Bearings in standard sizes and types can be *promptly delivered on all priority orders!*

You can benefit, too, by the Needle Bearing's other features—features that simplify your designs and speed your production processes. Consider these advantages of the Needle Bearing—and see how *every* one of them fills a wartime need.

IT IS EASY TO INSTALL. Built as a single compact unit, the bearing is simply pressed into place in the housing—a quick operation ideally suited to high speed production line methods.

IT CONSERVES OTHER MATERIALS on which you may be encountering delivery problems. Because of the Needle Bearing's small outside diameter, you can reduce the size of your housings, and hence the amount of material required.

IT ELIMINATES EXTRA PARTS AND ASSEMBLY STEPS. No retaining rings, washers, or end plates are needed to hold the bearing in place—and in most applications, no special lubricating equipment need be provided.

AND IN PRODUCT PERFORMANCE, the Needle Bearing offers the advantages of long life, high load capacity, low power consumption, minimum need of service attention.

Let a Torrington engineer show you how this unusual bearing can help you key your textile machinery designs to wartime conditions. For further details, write, wire, or phone for Catalog No. 116.

THE TORRINGTON COMPANY
TORRINGTON, CONN., U. S. A. • *Estab. 1866*
Makers of Needle and Ball Bearings
New York Boston Philadelphia Detroit Cleveland Chicago
Los Angeles Seattle Toronto San Francisco London, England

LET'S GO! U.S.A. KEEP 'EM FLYING!

TORRINGTON NEEDLE BEARING

MONEY SAVING FACTS ON LIXATE BRINE!

1. Steps up the efficiency of your own chlorinator for making bleach!

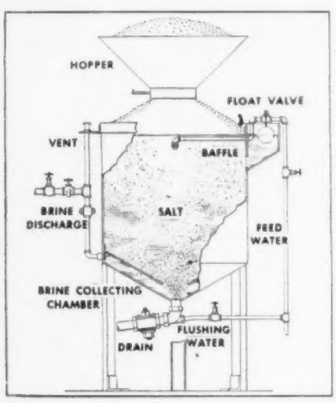
2. Regenerates your Zeolite water softener!

HOW THE LIXATOR INCREASES EFFICIENCY OF LAUNDRY CHLORINATORS (Cells for making hypochlorite bleach)—As you probably know, a chlorinator produces laundry bleach by a process of electrolysis, utilizing salt and water. However, the impurities in ordinary brine, and in the salt dissolution water, react slowly on the graphite electrodes and eat them away. Furthermore, suspended dirt and insoluble matter coat the electrodes with mud and interfere with the electrolysis. By using *clean, pure* Lixate Brine of controlled density in place of ordinary brine, these troubles are eliminated. In addition, the Lixator cuts costs by using economical Sterling Rock Salt in place of evaporated salt. Lixate Brine may also be used for regeneration of zeolite water softeners!

A "PLUS" FOR YOU! THE LIXATOR REGENERATES ZEOLITE WATER SOFTENERS—Lixate Brine is ideal for the automatic regeneration of zeolite. It is crystal clear, because it is free from insolubles. In action, the brine releases calcium and magnesium salts from the zeolite, carries them away and leaves the water softener as efficient as before.

THE LIXATE PROCESS CUTS OPERATING COSTS 5 WAYS!

1. No labor cost for making brine.
2. Users report savings of 10% to 20% in amount of salt required.
3. Lower cost for handling salt and brine in plant.
4. Fewer replacements of worn-out electrodes.
5. Elimination of labor cost in scraping mud from electrodes.



HOW THE LIXATE PROCESS MAKES PURE, FULLY SATURATED BRINE—International's Sterling Rock Salt of the recommended grade is placed in the hopper and flows by gravity to the Lixator below. Water enters through a spray nozzle at the top, dissolves the salt without agitation and becomes fully saturated brine. The brine is then self-filtered and rises in the collecting chamber to discharge pipe. Crystal clear, fully saturated brine is produced automatically. Repeated tests have shown that Lixate Brine is just as chemically pure as brine made by mixing water with salt that is 99.63% pure! Standard size Lixators produce fully saturated brine at capacities of 40 . . . 60 . . . 100 . . . 150 gallons per hour. If need be, the capacity can be stepped up with custom-built sizes, although in practice most companies find standard sizes completely adequate . . . placing the brine in storage tanks to meet all peak requirements.

FREE CONSULTATION! *Write to International Salt Co., Inc., for a free consultation with an International Field Engineer. He'll give you the facts and figures—complete details on what the Lixator can do for your plant. In addition, he'll be glad to recommend the proper type of Chlorinator installation best suited for your operations.*

The **LIXATE** *Process*
Reg. U. S. Pat. Off.
for making brine

INTERNATIONAL SALT COMPANY, INC., DEPT. T-5, SCRANTON, PENNSYLVANIA

A Nurse to Warp Yarn

Emmons Heddles are tough — but they treat yarn like a baby

"Tough but not rough" describes the qualities of Emmons steel heddles which give you longer service and improved weaving.

Life is longer because of high tensile strength, corrosion-resistant plating. Weaving is improved, because the smooth heddle eye eliminates a chief cause of chafed yarn and warp breaks.

Quality of Emmons Certified Steel Heddles is checked twice — once by careful plant inspection of individual heddles — also by testing of sample heddles by an independent technical laboratory.

Be Certain — Buy Certified

EMMONS LOOM HARNESS COMPANY
Lawrence, Massachusetts . . . . Charlotte, North Carolina

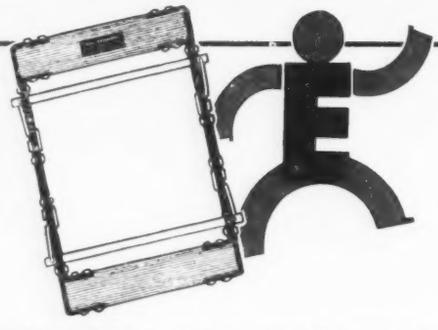
EMMONS REEDS KEEP TRAFFIC ON "GO"

Uniformly-sized (to .001″), accurately-spaced (to .01″), super-smooth dents of Emmons Reeds keep warp threads in line, giving you cloth free from reed marks or roughed-up yarn. Good knots, slubs and nits pass through resilient Emmons dents. Additional air space — up to 70% — is available as needed, without sacrificing strength or rigidity.

"Inspected and Approved" — the seal of Emmons quality — means painstaking inspection before every shipment of Emmons products.

EMMONS

WORKS OVERTIME WITHOUT CHARGING YOU



Look for the black EMMONITE finish on the ends of Emmons Heddle Frames. This Phytanium-blended, black finish actually penetrates the metal's grain—providing a protective surface without build up . . . fighting rust and wear. EMMONITE finish . . . hand-picked, knotless lumber . . . double shellac . . . rolled rivets . . . *extra* rivets—all these features add up to longer service.

EMMONS

Lawrence, Mass. and Charlotte, N. C. All products stocked in Charlotte and Lawrence, Reeds manufactured in Charlotte. Branch offices: Clifton Watson, Manager of Southern Sales, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2643) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6050) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

Argentina, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil*, Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile*, W. L. Robinson, Casilla 1570, Valparaiso; *Cuba*, Havana, J. M. Perez-Pena, Box 1611; *Mexico*, Mexico, D. F. Leo Lenk, Apartado 533; *Colombia*, Medellin, C. E. Halaby & Co., P. O. Box 139.

. . . why you may soon be using Accotex Aprons

APPROXIMATELY 435,000 spindles are now equipped with Armstrong's Accotex Aprons. Every one of them is a good reason why *more and more* spindles will be Accotex-equipped. For they are spinning better yarn . . . giving mill operators a convincing demonstration of Accotex superiority over old-type Aprons.

Here are the six outstanding qualities of Accotex Aprons which make them superior:

SEAMLESS: Accotex Aprons have no seams to break open and shorten life.

NONSTRETCHING: Accotex Aprons are reinforced with a sturdy interliner . . . eliminating loss of operating efficiency due to stretching.

UNIFORM: All Accotex Aprons have identical composition. Dimensions of every size are accurate. Barring unusual accidents, each Apron will give the same good service.

WON'T CRACK OR SCUFF: Accotex Aprons give cleaner running work and reduce waste to a minimum, because they don't crack or scuff during operation.

STABLE: Accotex Aprons are not affected by changing temperature or humidity. As a result, these Aprons perform with a minimum of lapping.

GOOD FRICTION SURFACE: Accotex Aprons provide a uniform "grip" that keeps slippage at minimum. Thus they aid maximum production of a high quality yarn.

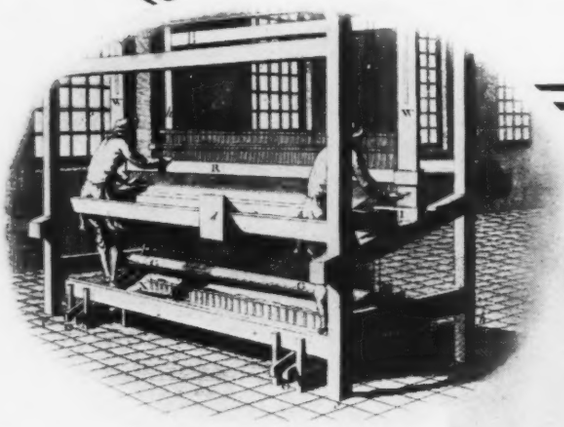
Armstrong's Accotex Aprons are *perfected* aprons. Years of research, testing, and field checking preceded their introduction to the textile industry. They're made of a non-oxidizing and highly oil-resistant compound developed specifically for textile manufacturing. Many Accotex Aprons now in use have given over two years' service and show little evidence of wear.

You can get prompt delivery on Accotex Aprons, so why not see your Armstrong representative right away for full details? Armstrong Cork Company, Industrial Division, Textile Products Section, 927 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX APRONS

CORK COTS · ACCOTEX COTS

They Used to "Play Catch" with a Shuttle



For narrow fabrics a single operator threw the shuttle from his left hand to his right. For wider goods, two men threw it back and forth to each other.

Loom with a "Picking Peg"

IN 1738, John Kay put a stop to this game of catch with the invention of the "picking peg." This device threw the shuttle mechanically by means of a peg held in the weaver's hand, attached by strings to opposite ends of the lay. Its introduction increased loom productivity four-fold.

The "picking peg" was an early development that became typical of all textile progress—increased efficiency by making processes more *continuous*.

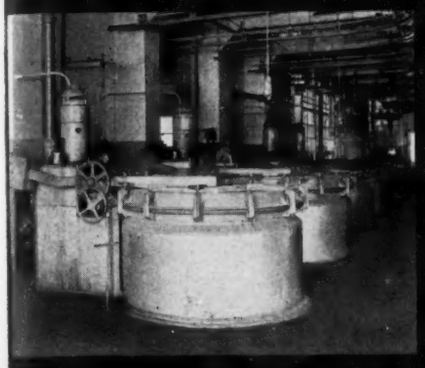
It seems like a far cry from John Kay to the "Continuous Process," Industrial's new method for producing rayon yarn, and yet it is the same story ever present in textile development—more *continuous* operation; less starting, stopping, changing and replacing. In one *continuous* thread, Spun-lo Rayon yarn is spun, washed, bleached, treated, dried and twisted. As a result, it is more uniform in strength, lustre and denier and is virtually free from knots and broken filaments.

Today, with peak efficiency as the goal of every industrial plant, these advantages are making a vitally important contribution to textile production.

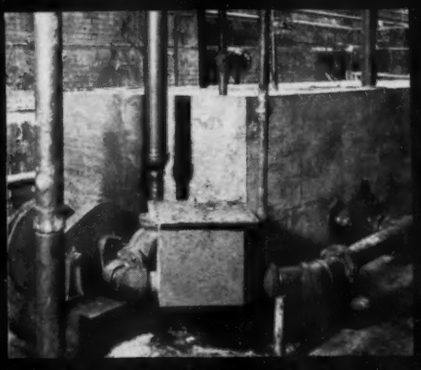
"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue

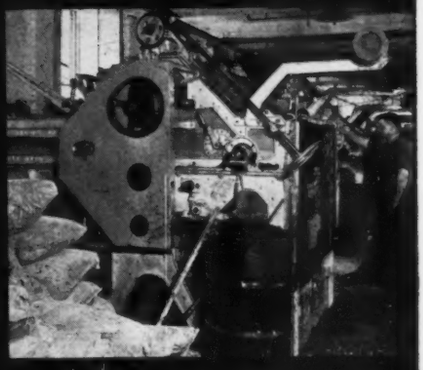
READY FOR PEACE AS WELL AS WAR



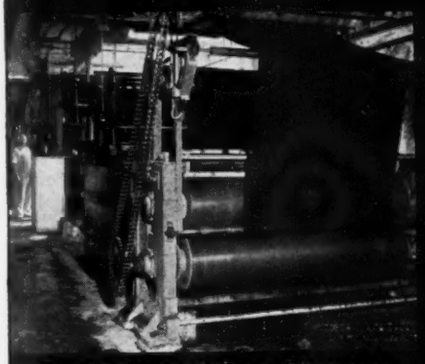
Stock Dye Kettles



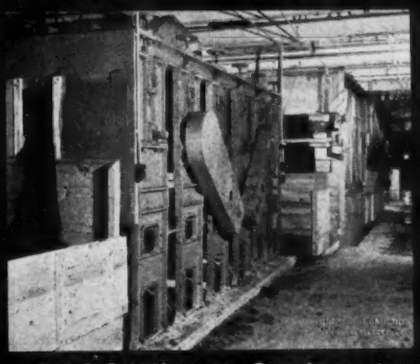
Soap Distributing System



Fulling Mills



Carbonizing Range Showing Acid Tank and Squeeze Rolls



Semi-Continuous Crusher at end of Carbonizing Range

Sweet Tenter Dryer

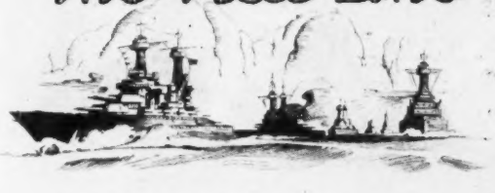
Recently modernized with Fleet Line Finishing Equipment, this New England mill, noted for quality fabrics, can meet present high production requirements. Equally important, it will be able to meet the low cost requirements of the peace to follow.

Even if you can't get satisfactory deliveries on finishing equipment for today's production, it is none too soon to plan for the future. Let us survey your finishing plant and streamline your production on paper, so we'll both be set to go when war time restrictions are lifted.

Benefits Realized

1. Approximately 30% saving in fuel due to reduced steam consumption.
2. Stock dyeing crew reduced from 27 to 8 men.
3. Carbonizing crew reduced from 8 to 2 men. Production continuous at 300 yds. per hr. on 30 oz. kerseys and at double that rate on 14 oz. fabrics.
4. Fulling production per machine tripled. Labor cut ½. Dead loss reduced and quality improved.
5. Estimated saving in soap of about 15% (soap distributing system recently installed.)
6. Sweet dryer production increased 75%. Labor reduced 35%. Much better drying.

The Fleet Line



OF FINISHING EQUIPMENT

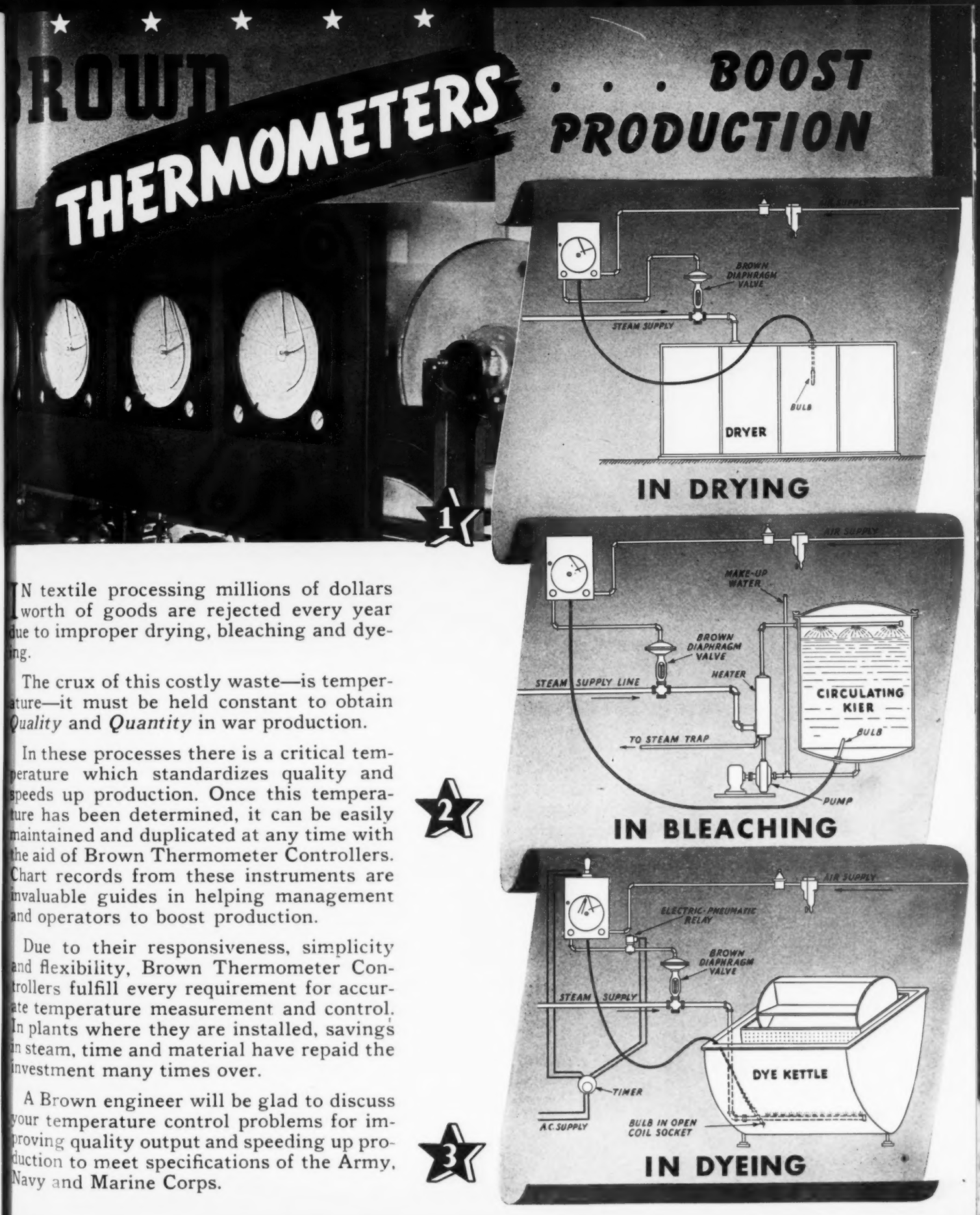
RIGGS & LOMBARD, INC.

FOOT OF SUFFOLK ST., LOWELL, MASS.

AGENTS: Paul A. Merriam, 11 Berwick Lane, Edgewood, R. I.
Harold C. Osler, 6312 Sherwood Road, Philadelphia, Pa.

fashioned in TUBIZE certified quality RAYON
Plus value
These are days when service qualities are weighed with utmost care. When a woman buys a dress or underwear, she is thinking "How long will it wear?" — "How easily will it clean?" Style is important but service is essential. And so the Tubize Certified Quality Label takes on added importance, as rayon is playing a larger and larger part in clothing the nation. This label answers positively all questions about service — it is a definite assurance that the fabric has been tested and is certified for wear, cleanability and lasting colors.
P.S. Put the Tubize Certified Quality Label to work for you on the dresses or underwear that you make or sell. Its value has been sold to the women of America by sound, consistent national advertising.
TUBIZE CHATILLON CORPORATION • 2 PARK AVE., NEW YORK
Acetate and Viscose Rayon Yarns and Fabrics

BROWN THERMOMETERS . . . BOOST PRODUCTION



IN textile processing millions of dollars worth of goods are rejected every year due to improper drying, bleaching and dyeing.

The crux of this costly waste—is temperature—it must be held constant to obtain *Quality* and *Quantity* in war production.

In these processes there is a critical temperature which standardizes quality and speeds up production. Once this temperature has been determined, it can be easily maintained and duplicated at any time with the aid of Brown Thermometer Controllers. Chart records from these instruments are invaluable guides in helping management and operators to boost production.

Due to their responsiveness, simplicity and flexibility, Brown Thermometer Controllers fulfill every requirement for accurate temperature measurement and control. In plants where they are installed, savings in steam, time and material have repaid the investment many times over.

A Brown engineer will be glad to discuss your temperature control problems for improving quality output and speeding up production to meet specifications of the Army, Navy and Marine Corps.

BROWN *Air-o-Line* CONTROLLERS

THE BROWN INSTRUMENT COMPANY, 4509 WAYNE AVENUE, PHILADELPHIA, PENNSYLVANIA
DIVISION OF MINNEAPOLIS-HONEYWELL REGULATOR CO.
MINNEAPOLIS, MINNESOTA AND 119 PETER STREET, TORONTO, CANADA
Wadsworth Road, Perivale, Middlesex, England. Nybrokajen 7, Stockholm, Sweden

PROGRESS REPORT:
ARALAC
now used in the manufacture of

SPORTS APPAREL

COATINGS

FLEECES

FELT HATS

DRESS FABRICS

BLANKETS

NECKTIES

COMFORTERS

PILLOWS

PERMANENT WAVING

Expressing our thanks for the trade's reception of

*ARALAC

LANARA

The Perfect Protein Fibre for Blended Fabrics

Less than six months ago ARALAC had, for the first time, been sufficiently tested in fabrics to warrant its being offered for general textile use.

Now, new as it is, ARALAC has proved its usefulness in many fields . . . and its sphere of service is constantly growing.

We are most appreciative of the warm reception accorded ARALAC by the various divisions of the textile industry.

We are doing all within our power to continue to meet the needs of present customers and to prepare ourselves to serve the growing list of new ones.

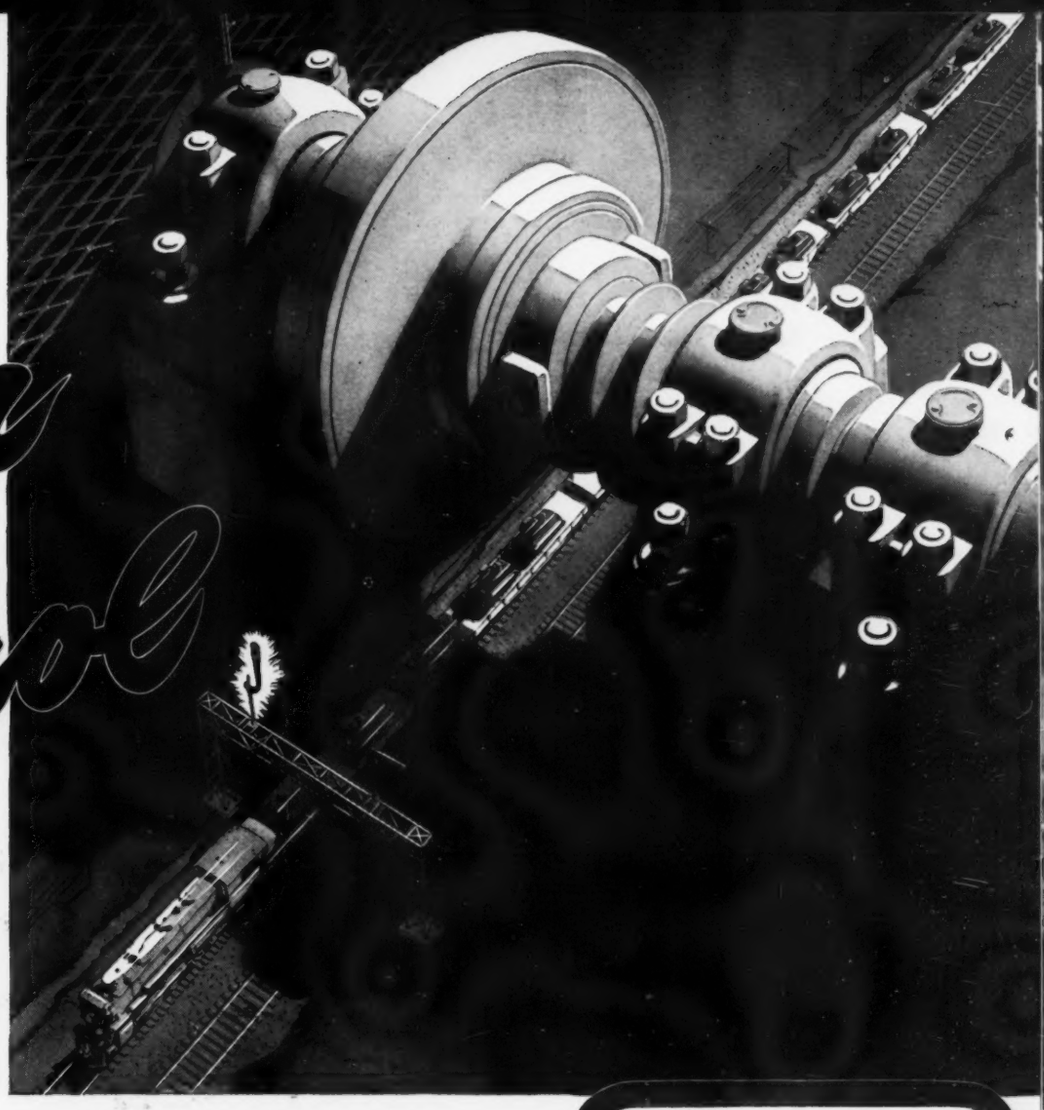
With our thanks for your support, goes our promise to contribute our fullest cooperation to all who wish to test the efficacy of this new man-made protein fibre in 1942!

★ T. M. Reg. U. S. Pat. Off.

ARALAC, INC.
Taftville, Connecticut

ARALAC, produced by a division of NATIONAL DAIRY PRODUCTS CORPORATION, represents but one of the many contributions this nation-wide organization is making toward the more efficient utilization of America's agricultural resources.

Power Control



. . . IS VITAL TO VICTORY PRODUCTION

ALL along the industrial front . . . Dodge bearings, clutches, pulleys, D-V belt drives and other power transmission appliances are working longer hours — under heavier loads — at higher speeds — to clear the way for Victory.

Dodge Friction Clutches control the flow of power in all branches of war industry — release capacity loads at command — proportion "HP's" to groups of machines—providing a clear right of way for Victory production. Perfectly balanced, with weight correctly distributed and uniform pressure assured by proper spacing of toggles, and with ample reserve for overloads — Dodge Friction Clutches deliver a smooth flow of power without shock to machine or strain on the power line.

"The Right Drive for Every Job" is more than a catch phrase — it is descriptive of a service which is vital to Victory. Through an efficient network of distributors, Dodge equipment is quickly available in all industrial centers — Depend on Dodge Power Transmission Equipment.

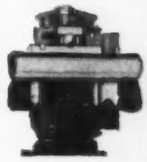
DODGE MANUFACTURING CORPORATION, ***Mishawaka, Indiana, U.S.A.***

Dodge-Timken Special Duty Pillow Blocks and Unit Mounts for heavy loads and high speeds.

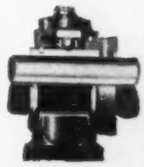
Dodge-Timken Clamp Sleeve Bearings . . . Hanger Bearings . . . Pillow Blocks and Unit Mounts. Rugged, and dependable general purpose bearings.

Dodge-Timken Type "C" Bearings . . . Hanger Bearings, Pillow Blocks and Unit Mounts with special seals to exclude the finest abrasive dust.

Dodge-Timken "Double Interlock" Pillow Blocks and Unit Mounts for normal radial, thrust and shock loads.



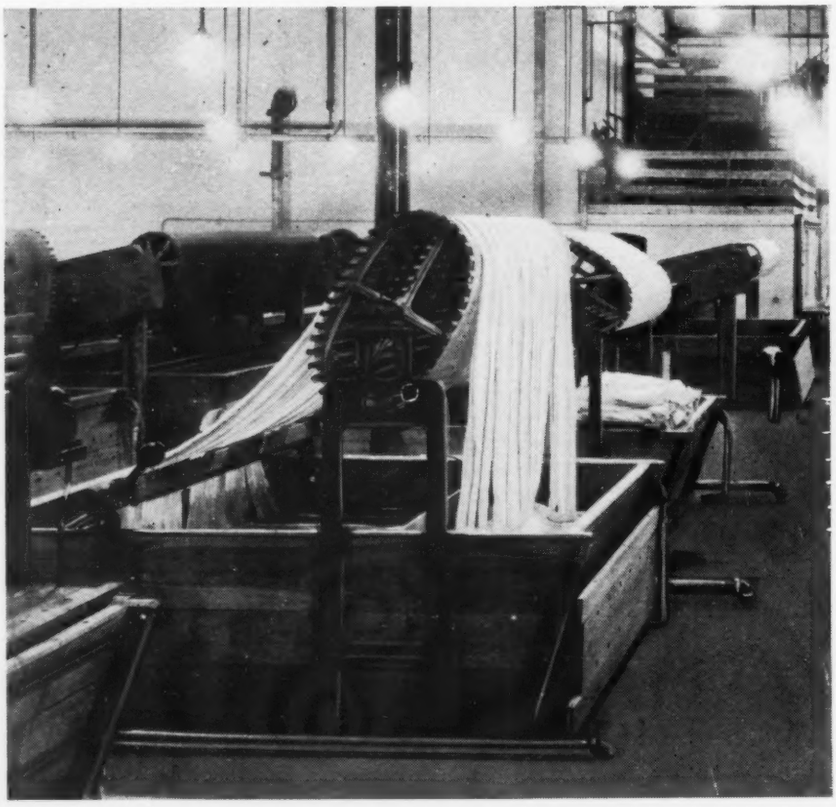
Dodge "DH" Ball Bearings — Hanger Bearings, Pillow Blocks and Unit Mounts. For high speeds and light to moderate loads.



Dodge "DH" Ironclad Ball Bearing Pillow Blocks with rugged cast iron housing for high speeds and light to moderate loads.

There's an ARMOUR SOAP *for every job*

"Custom-Made" to do the job your way!



NAME IT— *Armour Has It!*

Just name your requirements in soaps. Whatever your own special techniques and formulas call for, Armour is sure to have the soaps you need. For each textile process, Armour offers — not *one* soap — but *several* for you to choose from.

For dye leveling, rayon processing and wool scouring, fulling and after-scouring . . . Armour offers FOUR different titered soaps . . . each with a different base to suit *your own way* of doing the job.

CERTIFIED SOAP

Vegetable fatty acid base. Available in flakes and solid form.

VERDANT SOAP

Olive characteristics. In flakes, bar and solid form.

TEXSCOUR

Red oil base. In flakes.

PALM SOAP

Palm oil base. Available in chips and solid form.

No matter at what temperature you do cotton scouring, Kier boiling or cotton dyeing . . . there's an Armour high titer soap designed to give you long-lasting, efficient suds.

FLINT SOAP

Tallow base. Titer 41-42 C. In chips and powder.

INDUSTRIAL SOAP

Tallow base. Titer 39-40 C. In chips and powder.

Get Better Results — Consistently — At Lower Cost!

Armour not only gives you the *right* soaps for every job — but the finest quality soaps. They're made from choice, selected raw materials and chemically controlled through every step of their manufacture. Uniformly high in quality, thoroughly standardized, Armour's Soaps are consistently high in performance. And that means you are assured of better results — greater economy — day after day!

Next Time — Order Armour Soaps!

Phone, wire or write Armour and Company today and a representative will gladly show you how Armour's "Custom-Made" Soaps can improve production and cut soap costs in your plant.

ARMOUR and COMPANY

INDUSTRIAL SOAP DEPARTMENT

1355 WEST 31st STREET, CHICAGO, ILLINOIS

NO WAITING! 350 ARMOUR BRANCH WAREHOUSES INSURE QUICK DELIVERY OF YOUR ORDER!

TECA

has earned these honors

. . . garment tags which say "it's launderable" . . . assure acceptance for your spun rayons by commercial laundries. More and more new fabrics woven with Teca, Eastman crimped acetate rayon, are passing the tests of the American Institute of Laundering. Teca has earned this laundry approval because it exerts shrinkage control. In blends with other fibers, Teca is a stabilizing influence. Add to this the fact that Teca's crimp makes for extra richness of texture, extra resistance to sagging and crushing, and you have the reasons for the ever-increasing popularity of Teca fabrics.

Eastman

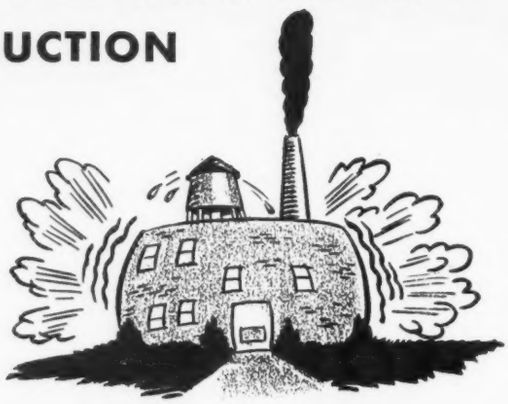
CRIMPED ACETATE RAYON

A. M. Tenney Associates, Inc., 10 East 40th St., N.Y. Sales representatives for Tennessee Eastman Corporation, subsidiary of Eastman Kodak Co.

Things are humming in textile mills today. And they'll have to hum still louder in order to turn out enough fabrics for both our armed forces and civilians.

AN EFFICIENT "HELPER" IN ASSURING TODAY'S ALL-OUT PRODUCTION

Speedy production necessitates uniformly dependable, safe processing agents. Processing agents so efficient and safe that they help step up production by cutting processing time — with minimum risk of costly, wasteful tie-ups and rejects.



There's a generous combination of efficiency and safety available in Olate. This pure, neutral, low titer soap has excellent detergent, lubricating, wetting out and penetrating properties. Properties mighty important in fulling, scouring and dyeing. Properties invaluable in processing woolens and the blended fabrics now being produced in tremendously expanded volume.

Olate's fluid solutions provide thorough, even penetration of the cloth. Its free rinsing properties help produce clean, sweet-smelling goods. As a safeguard against bare spots, uneven shrinkage, non-uniform fulling and poor felting, Olate will match — or excel — the performance of any other cleansing agent you've ever used.

Olate is helping many textile mills to get the top-notch processing results so vital in these get-the-goods-out-fast days. There's likely to be a spot in your mill, too, where Olate can help.

Olate

the universal textile soap

Procter & Gamble

Stainless Steel *is easy to clean*

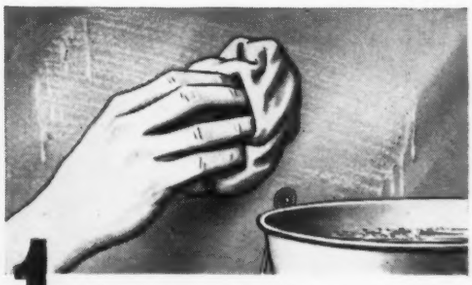
STAINLESS steel has proved to be an ideal material for many types of processing equipment because of its corrosion resistance and ease of cleaning. It gives years of trouble-free service with a minimum of maintenance.

Your stainless steel equipment, like these food processing kettles, will stay untarnished indefinitely if you keep it free from deposits of dirt, soot or particles of other metals. These four suggestions should help you keep it bright and shining.

• • •

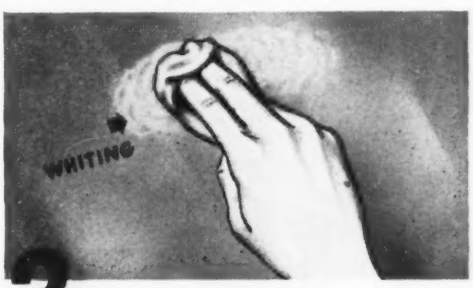
Although we do not make stainless steel or steel of any kind, we have produced for more than 35 years "Electromet" ferro-alloys and metals used in making steel. With the knowledge accumulated from this experience, we are in a position to give impartial advice on the selection and use of stainless steels. If you have a specific problem in the manufacture, fabrication, or use of steel, consult us without obligation.

The word "Electromet" is a registered trade-mark of the Electro Metallurgical Company.



1 Wash it regularly with soap and water, rinse with clean hot water and then dry with a clean cloth.

2 To remove adherent material, use a high quality household cleaning compound. *Do not use liquid or other metal "polishes" or "cleansers".*



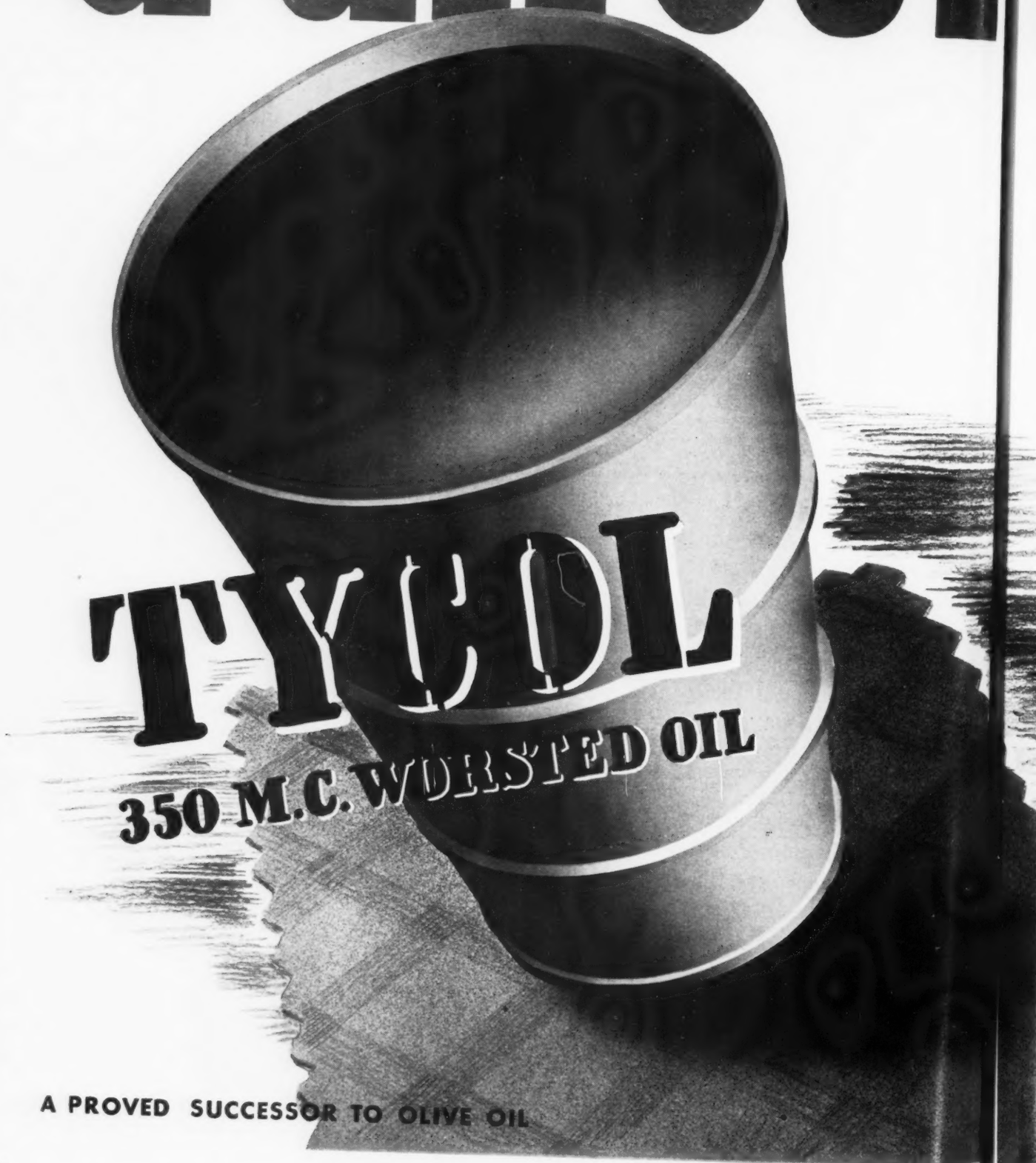
3 Finger marks and smears can be removed by rubbing with a clean dry cloth and a little dry whiting. If the surface is badly smeared, use gasoline and a little whiting.

4 For smears not readily removed by these methods use *stainless steel* wool or a *stainless steel* brush. (Ordinary steel may leave particles of iron which will rust on the surface.)

ELECTRO METALLURGICAL COMPANY
Unit of Union Carbide and Carbon Corporation
30 East 42nd Street UCC New York, N. Y.
In Canada: Electro Metallurgical Company of Canada, Limited, Welland, Ontario

Electromet
Trade-Mark
Ferro-Alloys & Metals

a direct



A PROVED SUCCESSOR TO OLIVE OIL

HIT

on the Olive Oil shortage!

A DIRECT HIT on the olive oil shortage and a distinct hit with the many mills already enjoying outstanding success with this new worsted oil – that's the story of Tycol 350 M.C. briefly told. This worthy alternate for olive oil is protecting fibres against breakage during carding, combing, drawing and spinning operations while saving the American woolen industry many dollars every month over normal peace-time olive oil processing costs. Tycol 350 M.C. possesses unusual stability . . . resists tendencies to become rancid and oxidize on aging.

We invite you to try Tycol 350 M.C. Worsted Oil. Put it through the mill, subject it to any tests peculiar to your individual manufacturing operations. The assistance of our textile engineers is yours for the request. Full details may be had by writing to the Tide Water Associated Oil Company, 17 Battery Place, New York, N. Y.

DRUMS! War needs make it extremely important that all empty drums be returned immediately.

TIDE WATER ASSOCIATED OIL COMPANY

EASTERN DIVISION
17 Battery Place, New York

Regional Offices:
Boston, Philadelphia, Pittsburgh, Charlotte, N. C.

INDUSTRIAL TYCOL OILS-GREASES

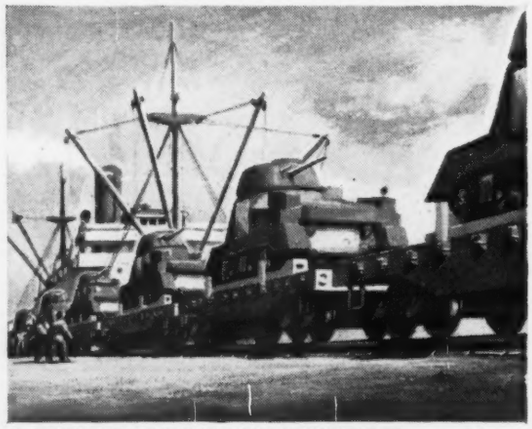
MAKERS OF THE FAMOUS VEEDOL MOTOR OIL

1. AMERICAN INDUSTRY IS ON THE OFFENSIVE! *Munitions, Metal, Oil, Textile* and many other kinds of plants are charging ahead full blast. Acid is one of their weapons. The tanks that hold it must be tough . . . must keep the acid under control while it does its useful job . . .

2. NO WONDER TELLURIUM LEAD is used to fortify acid tanks, pipe lines, and heating coils! This special alloy keeps sulphuric and other acids in line even at elevated temperatures. A high temperature lead, it resists acid corrosion at temperatures approaching its own melting point...

How to Armor a Tank for the Production Drive

3. TOUGH TO BEGIN WITH, Tellurium Lead actually strengthens under stress. Bending, hammering, stretching, make it work-harden. Result: joints and turnover points are less subject to cracking . . . buckling and creeping are cut down . . . effects of vibration and temperature changes are minimized . . .



4. THESE IMPORTANT NEW ADVANTAGES are the result of alloying time-tested St. Joe chemical lead with a small percentage of Tellurium. Tellurium lead, fabricated in sheets, pipes and coils, is helping keep industry in its Victory stride . . . helping America keep 'em rolling.

NATIONAL LEAD COMPANY—New York, Baltimore, Buffalo, Chicago, Cleveland, Cincinnati, St. Louis; National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co. of Penna., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis; Master Metals, Inc., Cleveland; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

TELLURIUM LEAD

A NATIONAL LEAD COMPANY PRODUCT

A VERSATILITY You Can Use for War Production

THE versatility and large capacity of Franklin Process Yarn Dyeing Service, which was used in the making of these home furnishing fabrics, is yours to command for defense production. Using our service, you don't have to wait for yarns to be spun from dyed stock. We have a large supply of natural yarn in all our plants which we can dye, twist and wind to your specifications on short notice. Quicker shade corrections and more accurate matching of shades also speed up deliveries and improve quality.

Consult us for prompt solutions of your defense production problems.

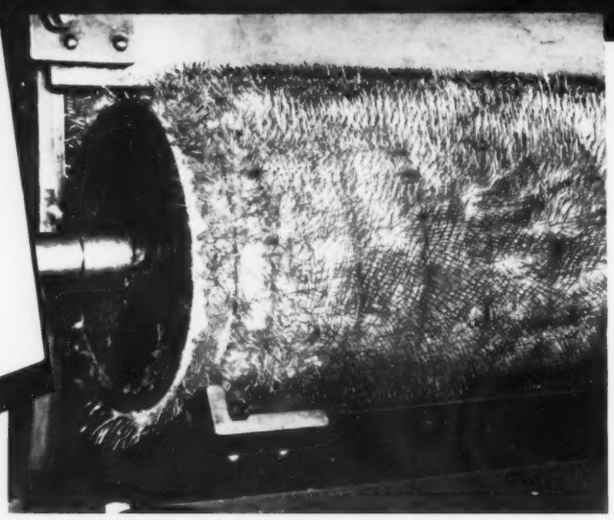
Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

★ Providence, Philadelphia, Greenville, Chattanooga; New York Rep., 40 Worth Street; Chicago Rep., 100 W. Monroe Street.

HOW TO GET LONGER LIFE *and* BETTER WORK FROM CARD CLOTHING

DON'T USE A STRIPPING BRUSH LIKE THIS!



IT is a fallacy to assume that the vacuum stripper has made the stripping brush on a card unnecessary. The latter still plays an important part in the promotion of good carding by freeing the cylinder clothing of impacted waste, hulls and other foreign matter which the former fails to touch, and good carding practice demands that a brush be used regularly once a week.

The cost of a stripping brush is negligible. Therefore there is little excuse for using one in poor condition. This is all too frequently done and is often the cause of selvages loaded with neps. Shiners (wire knocked forward) and loose fillets are the results from using a brush in the above condition.

It pays to use a good stripping brush and one with the correct wire for the purpose. Ashworth can supply you with both.

ASHWORTH

PIONEERS IN CARD CLOTHING . . . *ASHWORTH BROS., INC.*
Woolen Div. AMERICAN CARD CLOTHING CO.

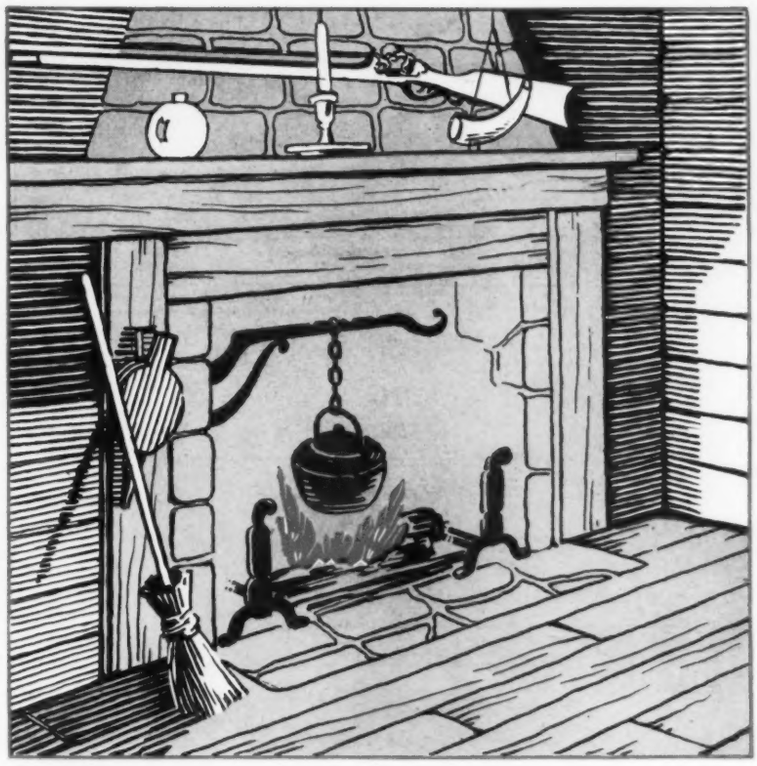
3 FACTORIES FALL RIVER, WORCESTER, PHILADELPHIA

6 REPAIR SHOPS FALL RIVER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

7 DISTRIBUTING POINTS FALL RIVER, WORCESTER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

SOUTHWESTERN REPRESENTATIVE: • TEXTILE SUPPLY CO., DALLAS, TEXAS

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed



Lest we forget...

WITH the machinery of war so much in the headlines, many of us may minimize the importance of our individual contribution to the success of America's War Program. We must not forget that the American spirit has its roots in the home, in our every day lives. Crude Colonial cabins first sheltered the flame that blazed into a free America. Its battles were fought and won by poorly-clad, often ill-fed men whose chief weapons were faith and the muzzle-loading flintlock that rested over every fireplace. Union now with that spirit of America's infancy, will forge the will and might of a great Nation into a certain instrument of Total Victory.

★ ★ ★ ★ ★

INDUSTRIAL SALES DIVISION

A. E. STALEY MANUFACTURING CO.

DECATUR ILLINOIS

● Built by
JOHNSON & BASSETT, INC.

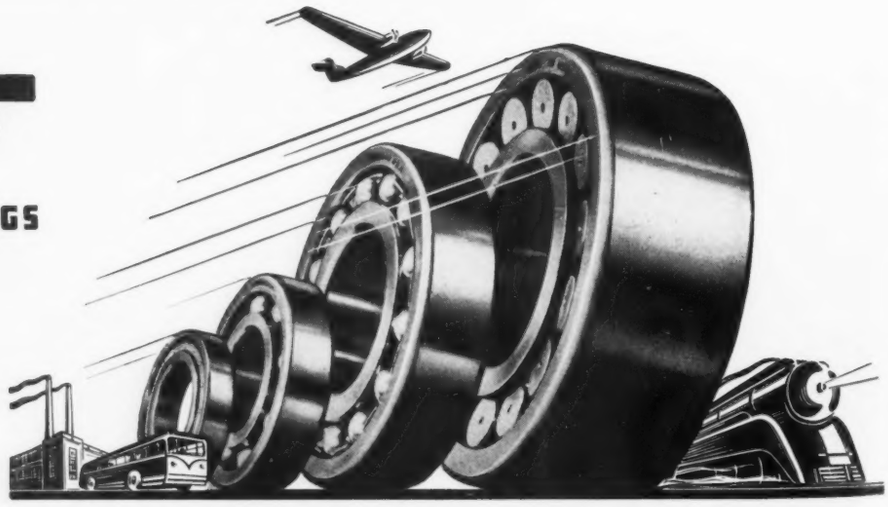
500 SKF Bearings *pep up* PRODUCTION

When you realize how important a part that *wool* is playing in the War, it's easy to understand why these Giant Package Mules must operate efficiently. Uniforms, blankets, flags, etc., must be made FAST —and speed under pressure on this machine is guaranteed by more than 500 SKF Ball Bearings. Let radial and thrust loads come as they will, SKF's maintain their initial close tolerances and full load carrying capacity . . . save labor and production delays . . . use very little lubricant. This is the age of Speed in War Production . . . and Speed becomes a *certainty* with SKF Bearings. 5061

SKF INDUSTRIES, INC., PHILA., PA.

SKF

BALL & ROLLER BEARINGS



IF you were judging by past volume, you were right. Industry was slow to take full advantage of the weight savings offered by this lightest of lightweight metals. But you were wrong if you were thinking of experience. American Magnesium Corporation has been fabricating Magnesium Products for over a quarter of a century.

Today, complicated castings for military uses are coming out of American Magnesium foundries by the ton, where demand was once counted in pounds. And so it is with all Mazlo Products; permanent mold and die castings, extruded bar and shapes, sheet, tubing and forgings. The doing, learning and improving that come of twenty-five years of working with Magnesium Alloys now make this wartime production possible.

Manufacturers who pioneered with us, adopting Magnesium Products, are now profiting by their foresight. Designing with Magnesium is enabling them to improve performance of vital war equipment and speed up its production.

Our engineers will gladly work with you. Sales Agent for Mazlo Magnesium Products: Aluminum Company of America, 1705 Gulf Building, Pittsburgh, Pennsylvania.

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

MAZLO REG. U.S. PAT. OFF. MAGNESIUM PRODUCTS

"My parts bill is much lower with Gulf Quality Lubricants"

. . . says this Overseer of Weaving

Actual photo of a Gulf engineer consulting with Overseer of Weaving on loom lubrication.

"Proper lubrication has also reduced our loom fire hazard"

"I HAVE tangible evidence of better lubrication with Gulf quality oils and greases," says this Overseer of Weaving. "First, our loom parts bill is *way down*—which is mighty important, with parts so hard to get lately. Second, we haven't had a loom fire in months, for the Gulf grease on the cams stays right where it belongs."

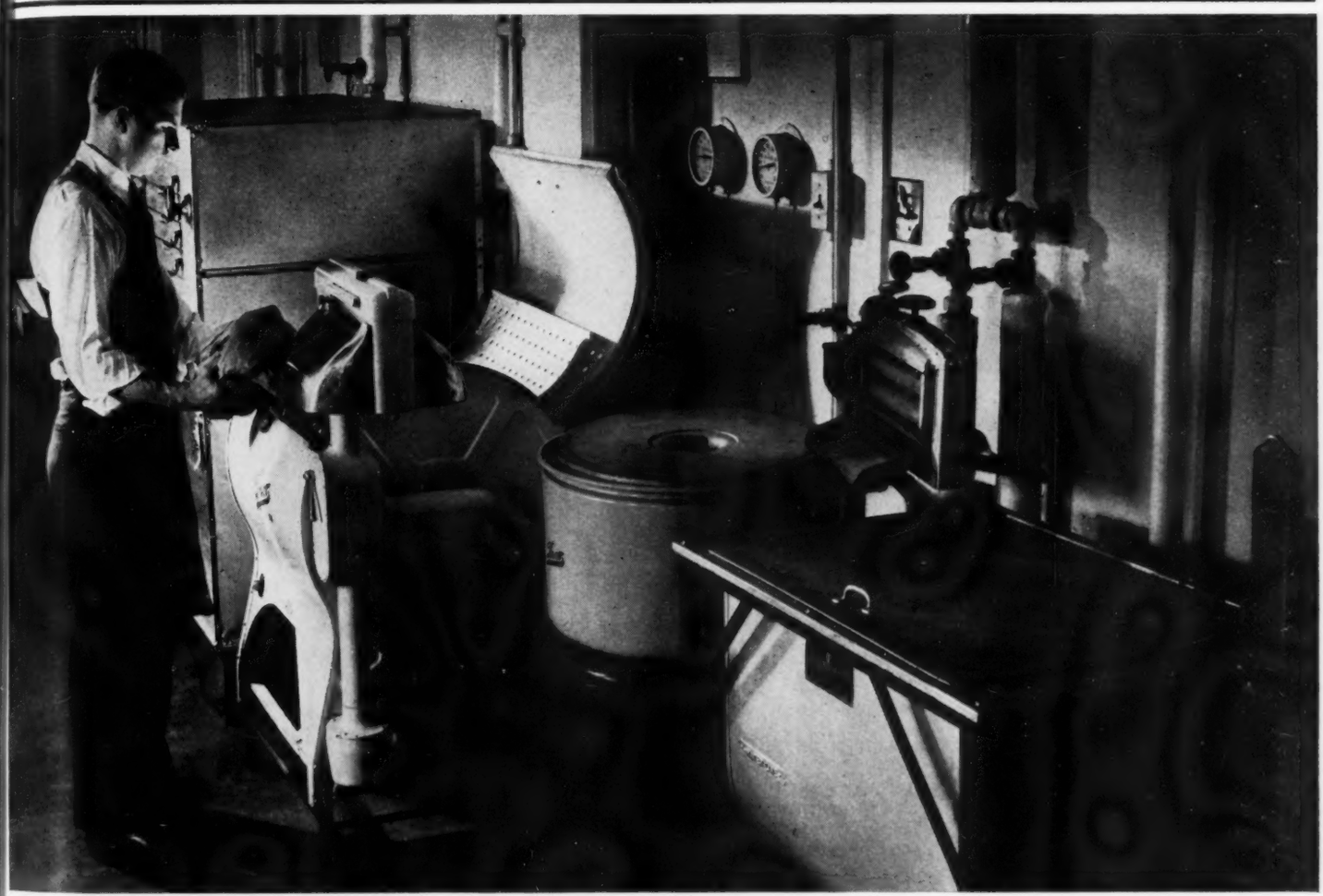
There are good reasons why textile mill men report important benefits with Gulf higher quality oils and greases in service. These lubricants are scientifically manufactured to the most rigid specifications for stability and endurance. Thus they stand up and provide a tough film of highest lubricating value even under severe operating conditions—conditions which often result in breakdowns and interruptions to production schedules.

Does any department in *your* mill report frequent delays from mechanical troubles? Play safe—ask a Gulf engineer to check over your equipment and recommend the proper Gulf lubricant for each moving part. The Gulf line of more than 400 quality oils and greases is quickly available to you from 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

GULF OIL CORPORATION · GULF REFINING COMPANY
GULF BUILDING · PITTSBURGH, PA.

★ GULF INDUSTRIAL LUBRICATION ★

It's the wash that determines the wear!



LAUNDRY — At the extreme right is pictured a Launder-O-Meter, a machine designed by the A.A.T.C.C., in which samples can be washed simultaneously by several different detergents under constant temperature and agitation conditions. Also shown are the Dasher and Rotary type washers as used in homes and mills. In these machines, fabrics are subjected to prescribed wash tests to determine the shrinkage and washfastness of colors and finishes. Both machines are heated with live steam. At the extreme left is an Andrew & Goodrick dryer in which wet samples are placed on trays and air dried.

FROM THEORY TO PRACTICE — To help bridge the gap between research laboratory theory and actual plant practice, the Rohm & Haas Textile Sales Service Laboratory daily reproduces the exact conditions to which fabrics are subjected in actual usage. Almost every condition to which a cloth or fabric conceivably could be subjected either in plant processing or in daily usage can be reproduced by the trained technicians and precise machines of the Rohm & Haas Textile Sales Service Laboratory. Whether your problem is one of abrasion resistance or washfastness, crush resistance or wet strength, we know that our modern well-equipped laboratories can be of service.

TRITONS – *Synthetic detergents, emulsifying, wetting, and dispersing agents.*

RHOTEXES – *Synthetic gums for sizing and thickening.*

DEGOMMAS – *Concentrated diastatic and proteolytic enzymes for desizing.*

RHOPLEXES – *Aqueous resin dispersions for finishing and coating fabrics.*

RHONITES – *Modified urea formaldehyde resins for textile finishing.*

PROTOLIN – *Stripping agent for wool stock and piece goods.*

FORMOPON – *Reducing and stripping agent in acid systems.*

LYKOPON – *Reducing and stripping agent in basic systems.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes . . Enzymes . . Crystal-Clear Acrylic Plastics . . Synthetic Insecticides . . Fungicides . . and other Industrial Chemicals

• Another advertisement telling how different American industries are speeding up wartime production •

We've got to keep giving him 13 EXTRA *to win the war*

Taylor Instruments are helping America's planes fly farther faster...

▶ We'll win this war in the air. We'll win it because our planes are powered by the world's best gasoline.

Our planes use high-powered, 100-octane gasoline. Our enemies depend on gasoline which averages 87-octane. This 13-point lead gives an American pilot ⅓ more power from his fuel than his opponent gets. Our boys can climb out of anti-aircraft fire 40% faster . . . fly higher than enemy planes of the same weight . . . get off the ground one-fifth faster. Our 100-octane gas reduces the fuel load so our bombers can carry 20% to 30% more bomb load, or fly farther with heavier armament.

We've got to "fill 'er up" for ourselves and our allies with three times as much 100-octane aviation gasoline as we're producing now—increase production to 5 million gallons a day! We can. We're going to. We're doing it. Taylor Instruments are helping the speed-up.

From pilot plants through commercial plants, Taylor Instruments and Taylor engineers have been a vital help in producing high-octane gasoline. Now *every* gasoline refiner considers instruments essential. Taylor Instruments insure precision processing—automatically accurate and constant control of complicated chemical and physical reactions—complete, dependable uniformity—lower operating costs—more, *better* production.

With Taylor Instruments indicating, recording and controlling temperatures, pressures, liquid levels, rates of flow in all the perplexing, exacting refining operations, America's great oil industry *is* producing the high-grade gasoline and lubricating oil we need—and *can* produce more . . . *more* . . . MORE!

Uncle Sam and our allies are relying on Taylor Instruments to help produce:

100-OCTANE AVIATION GASOLINE
. . . in plants of the biggest producers of this type of fuel.

HIGH-GRADE LUBRICATING OIL
. . . in plants producing the quantities needed by tanks, cars, planes.

BETTER ASPHALT
. . . in plants furnishing this "quick take-off" surfacing for airfield runways and highways.

Without help from the oil industry, America couldn't win the war. Without the aid of automatic control instruments of the types made by Taylor, the oil industry couldn't hope to do its staggering job. Without Taylor Instruments, many another American industry could never have speeded up victory production. Are Taylor Instruments helping you do *your* war work? Have you called in Taylor engineers, to suggest ways of *getting more* out of your present equipment? Are you really tuned up to turn it out? Taylor Instruments will help you *now*—America needs you *now*. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. Makers of the famous "Not 1 but 5" Fulscope Controllers.

Taylor
Indicating Recording Controlling
TEMPERATURE, PRESSURE, FLOW *and* **LEVEL INSTRUMENTS**

★ ★ ★ **HELP BEAT 'EM BY BUYING U. S. DEFENSE BONDS** ★ ★ ★

Your Answer is on the Ceiling!

CALL YOUR DAY-BRITE REPRESENTATIVE

You'll be agreeably surprised to learn how effectively your Day-Brite Engineering Representative will help you. Call him —whatever your lighting requirements may be, Day-Brite can meet them adequately, quickly. Not with generalized suggestions — but with specific recommendations based on a detailed analysis of your individual requirements. Where necessary, a complete layout and blue-print service is available. This service is gratis, in the interest of Light for Victory.

TURN YOUR THOUGHTS TO LIGHT, and you will find the answer to many of your planning and production problems — particularly if you specify the lighting fixtures designed to give you all that fluorescent has to offer.

The design of Day-Brite Fluorescent Fixtures takes into account all of the most advanced principles that effectively control the output of this newest source of light . . . Correct spacing of tubes — proper shielding — maintenance of cut-off angles that govern light distribution — high-power-factor ballasts, lamp starters and other approved accessories — all are combined in Day-Brite Fluorescent Lighting Fixtures to assure an effective flood of glare-free illumination over the entire work area . . . Look to Your Ceilings . . . Add Victory Hours with Day-Brite, the Rival of Day Light!

DAY-BRITE LIGHTING, INC., 5496 BULWER AVE. • ST. LOUIS, MO.

The **SUPER TWO-HUNDRED TWO-FORTY • THREE-FORTY**
For Factories, Mills

The **KINGSWAY**
For General Offices

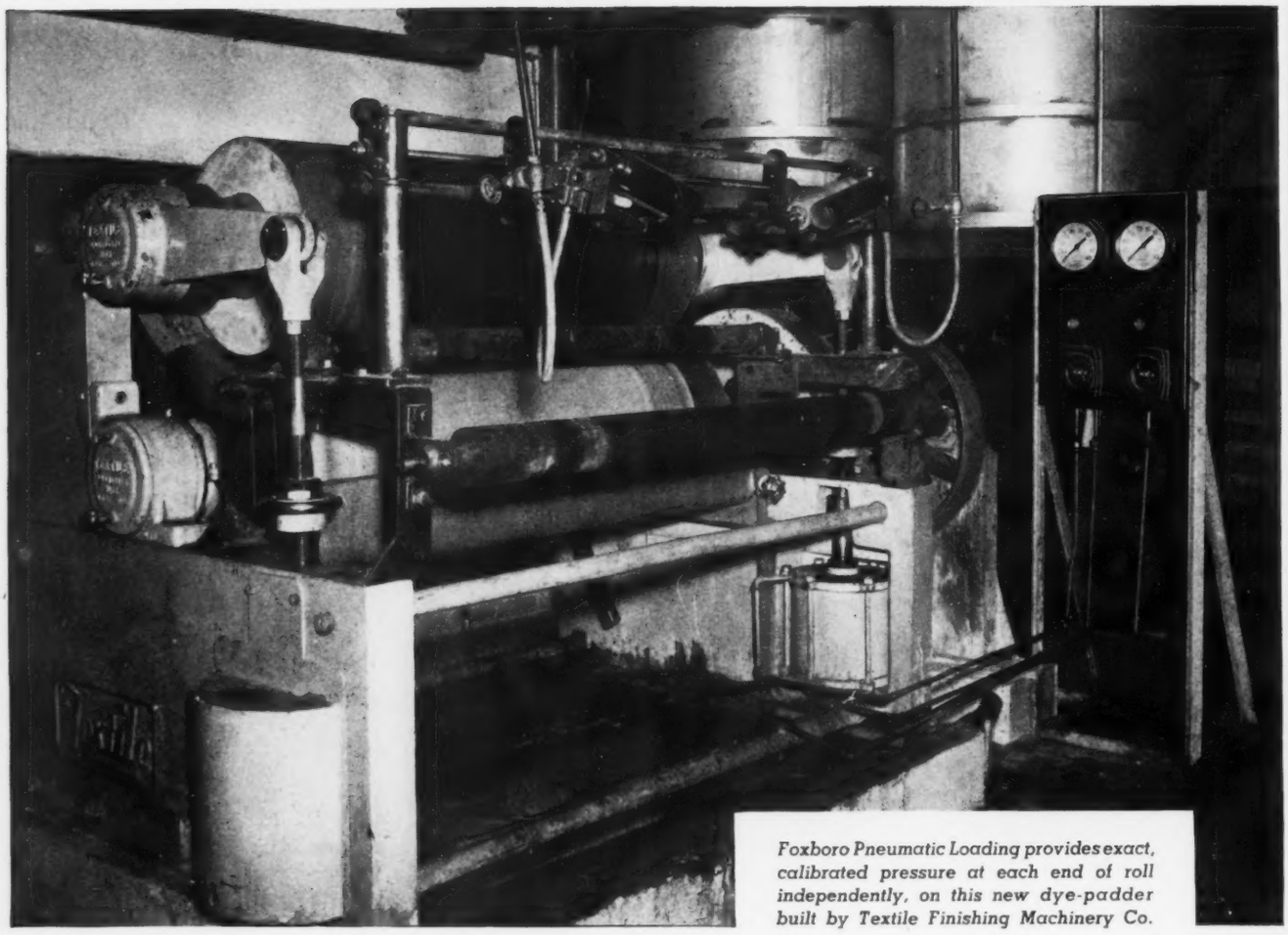
DayBrite Rivals Daylight

Adds Victory Hours!

Day Brite FLUORESCENT FIXTURES

49

The **COMPLETE LINE OF FLUORESCENT LIGHTING FIXTURES** *Nationally distributed through all leading electrical supply houses*



Foxboro Pneumatic Loading provides exact, calibrated pressure at each end of roll independently, on this new dye-padder built by Textile Finishing Machinery Co.

Solving *Production "Bugs" That Defy Usual Methods!*

Today, a wide variety of textile processes – from the simplest to the most difficult – can be operated with new cost-cutting, quality-boosting exactness through use of Foxboro Instruments.

The reason is, that Foxboro Instruments are designed by men who know the industry's processes and problems from the bottom up. Their long experience has enabled them to develop, not only standard instruments of new high accuracy for textile measurement and control service, but also complete new instrument systems where special tasks must be performed better.

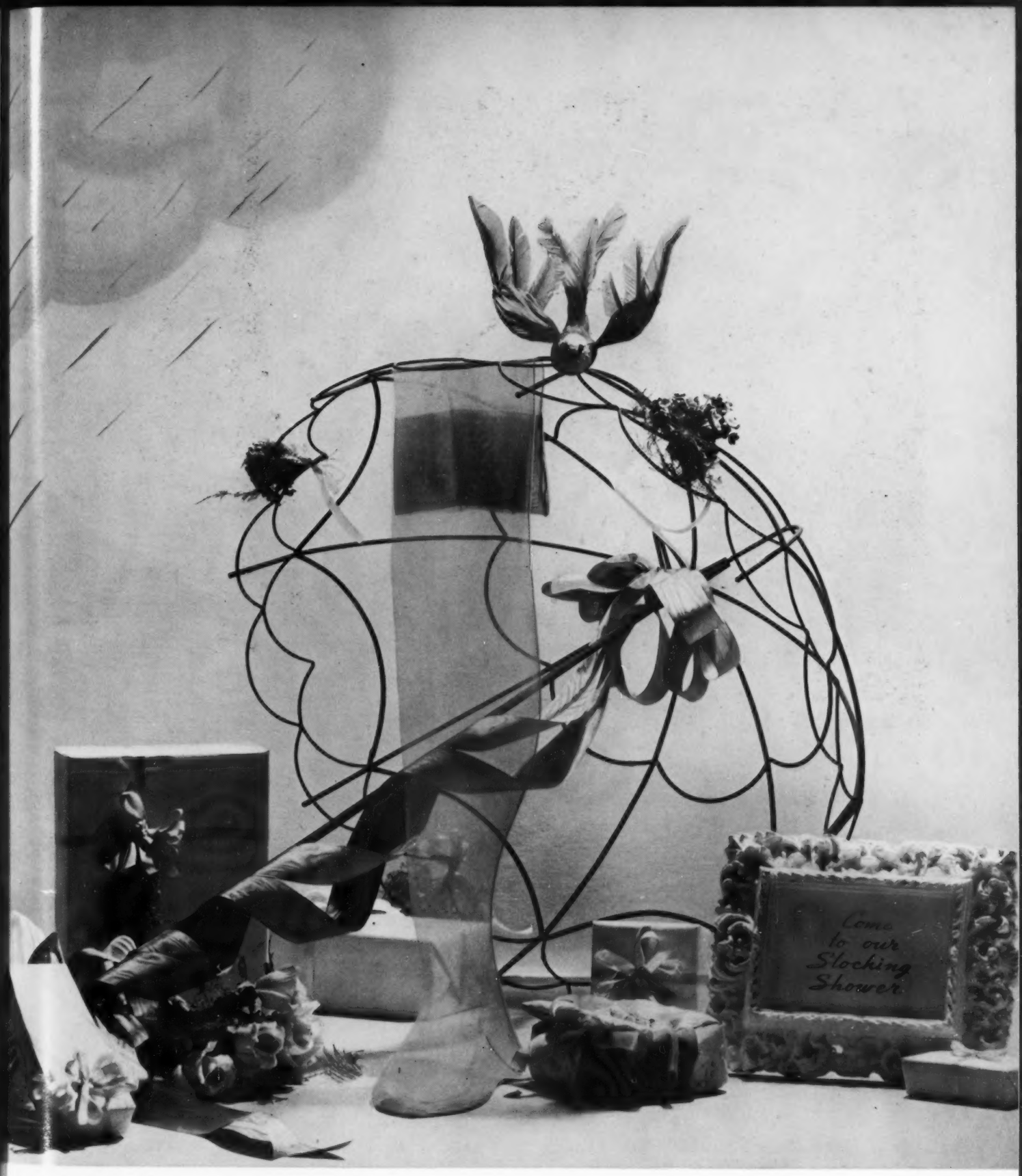
A typical example of these new systems is Foxboro Pneumatic Loading for dye-padders, mangles and mercerizers. Operating automatically after initial setting, this original Foxboro Instrumentation System maintains exact calibrated pressure at each end of the squeeze-roll independently. It eliminates squeeze-variations, bouncing of out-of-round rolls, and costly maintenance . . . all the "bugs" of hydraulic, weight or screw loading!

Write for detailed information on Foxboro Pneumatic Loading Systems or Foxboro Instrumentation for any other textile operation. **The Foxboro Company, 84 Neponset Ave., Foxboro, Mass., U. S. A.** Branch offices in principal cities of United States and Canada.

FOXBORO

REG. U. S. PATENT OFFICE

Creative Instrumentation



S. Navy
ded to
ree for
Ord

E" Insignia (twice size)
vees of Textile Machine
tstanding production of
ce materials.

Come to our stocking shower . . . Every woman knows that the flattering sheerness of the fabric is what makes stockings a favored gift. Every hosiery manufacturer knows that regardless of the fibre used a fabric can only be as good as the needles will produce. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.

U. S. Navy Ordnance Flag and "E" Pennant awarded Textile Machine Works for outstanding production of Naval Ordnance materials.

"Happy the man who has been able to learn the cause of things."
VIRGIL

Until the Victory is Won! . . . The makers of Reading Full-Fashioned Knitting Machines are now 100 per cent on Ordnance production. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at the point of highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

MONSANTO CHEMICALS FOR THE TEXTILE INDUSTRY

- ACETIC ACID
- ALUMINUM SULFATE
- AROCLORS (chlorinated diphenyls)
- CALCIUM SULFATE
- CAUSTIC SODA
- CHLORINE
- DYESTUFF INTERMEDIATES
- DISODIUM PHOSPHATE
- GLAUBER'S SALT
- LACQUERS
- MERCLOR (bleach)
- MIXED ACID
- AMMONIUM PHOSPHATES
- NITRATE OF IRON
- OIL OF VITRIOL
- PHOSPHORIC ACID
- SANTOMERSE (wetting and surface active agent)
- SODIUM ACID PYROPHOSPHATE
- SODIUM BISULFITE
- SODIUM SULFATE, anhydrous
- SODIUM SULFITE
- SOLVENTS
- SOPET (wool spinning lubricant)
- SULFURIC ACID
- TETRAPOTASSIUM PYROPHOSPHATE
- TETRASODIUM PYROPHOSPHATE
- TRICALCIUM PHOSPHATE
- TRISODIUM PHOSPHATE

NEW FABRIC FOR ARMY SHIRTS

Here is a sample of the 6-oz. cotton twill which the Philadelphia Quartermaster Depot now requires in large quantities for Army shirts. It is to be furnished in one type and in one grade, "Firsts." For details see tentative specification P. Q. D. 95.

Four ways to save chemicals... and still produce "Firsts"

ALREADY the textile industry has hit a record four-billion-dollar-a-year pace in its all-out drive to clothe and equip the United Nations for victory...and still the calls for more, like the invitation to bid on this new army shirting, keep coming.

To help you meet those calls with a minimum of hard-to-get textile chemicals, here are four suggestions for saving on processing materials *without* sacrificing the quality our fighting men deserve and demand:

1. Is your store-keeping system waste-tight? Do you guard against evaporation loss of volatile materials... spoilage of heat or moisture-sensitive materials... leakage from storage vats or bins?

2. Do you make up your processing solutions in *exactly* the quantities needed for the goods to be processed so that no left-overs are wasted?

3. Are there any ways you can change a process or adjust your methods of application to use less of a given material?

4. Would control instruments on such equipment as scouring machines, slashers, or dyeing machines help to cut waste?

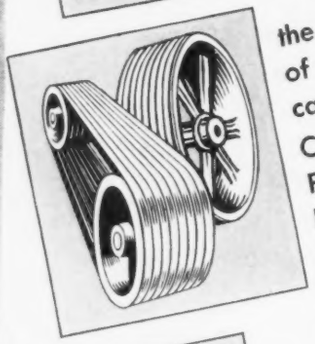
For our part, we are bending every effort to increase production on all the twenty-seven essential chemicals which Monsanto supplies to the textile industry...*without* sacrificing the top quality *you* deserve and must demand. MONSANTO CHEMICAL COMPANY, St. Louis, Missouri, and Everett Station, Boston, Mass.

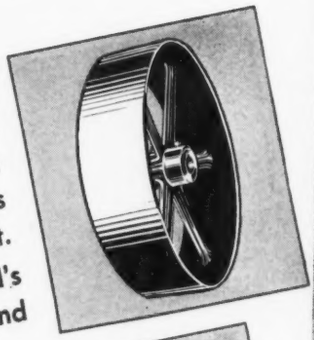
MONSANTO CHEMICALS

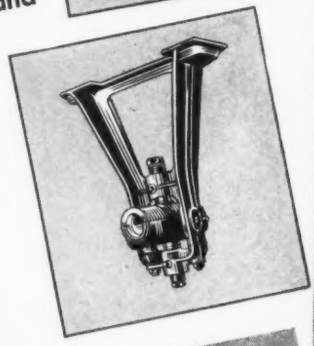
SERVING INDUSTRY...WHICH SERVES MANKIND

Wood's

for PEAK PRODUCTION WITHOUT INTERRUPTION







POWER TRANSMISSION has a lot to do with achieving the maximum output *without interruption* that is so very necessary today. Having experience accumulated from 85 years of specialization in the development, design, manufacture and application of successful power transmission equipment, Wood's can give you the products . . . the service you want. Covering almost every transmission need, Wood's Products deliver the utmost in economy, efficiency and long service life.

It will pay you to investigate the many savings the Wood's Long Life Line offers. Write today for more information, or ask for our catalog number 82.

T. B. Wood's SONS COMPANY
CHAMBERSBURG, PA.

EVERYTHING IN TRANSMISSION

BEARINGS • COLLARS • CLUTCHES • COUPLINGS •
CONTACTORS • HANGERS • PILLOW BLOCKS • PULLEYS
V-BELT SHEAVES and COMPLETE DRIVES

BUY WAR BONDS

STEER CLEAR OF SUMMER TROUBLE—

Daycos NEVER LET YOU DOWN WHEN THE THERMOMETER GOES UP

All-season Dayco Tempered Roll Coverings never let you down when the thermometer goes up to sizzling heights. Daycos are built, engineered and *proved* to keep rolling on—serene and sure in summer's heat without flattening, distorting or grooving. Unaffected by extremes of temperature, Daycos unvarying properties reduce "down" time—decrease maintenance costs and increase the production of high standard, uniform yarn. All this, and longer life too, Daycos deliver at lower cost-per-month of use.

THE DAYTON RUBBER MFG. CO.
TEXTILE PRODUCTS DIVISION
WAYNESVILLE, N. C. DAYTON, OHIO
The Originators and Pioneers of Dayco Tempered Roll Coverings

GREENVILLE SALES OFFICE
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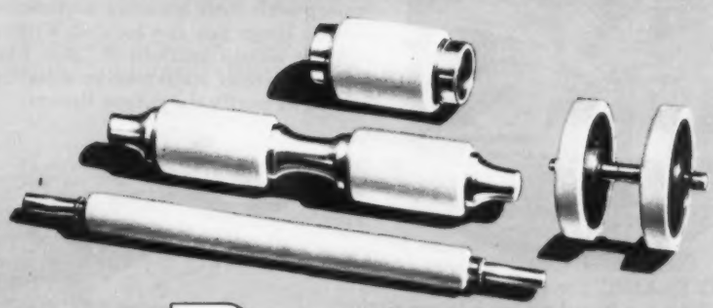

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Thorobred TEXTILE PRODUCTS
Dayco ROLL COVERINGS—LOOM SUPPLIES

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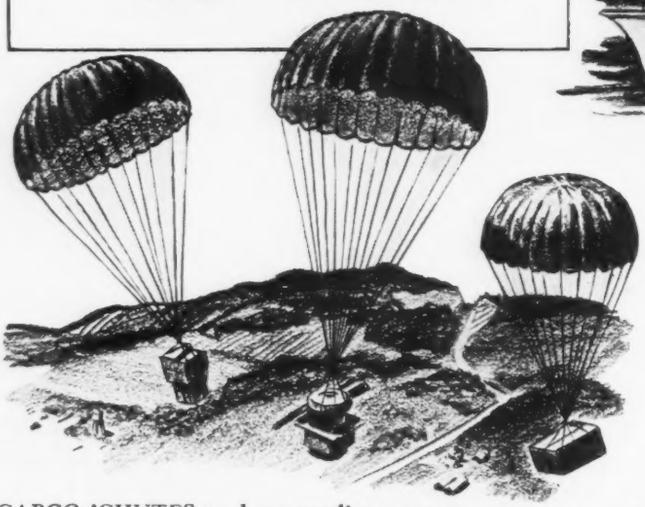
Caustic Soda *helps speed America's War Effort!*



CARGO 'CHUTES to drop supplies to paratroops or isolated garrisons are now being made of rayon. Although still in the experimental stage, rayon promises to replace other fabrics which are needed for parachutes that carry human cargoes. Largest U.S. user of caustic soda, the rayon industry produces rayon cord for tires...high-tenacity fabric for self-sealing gasoline tanks.

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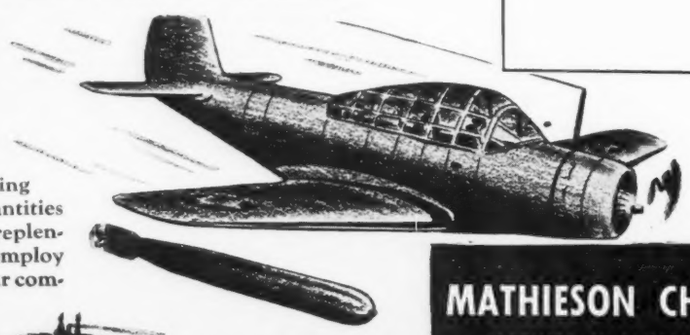
UNCLE SAM'S "Battlewagons" pack a lethal wallop with their bristling batteries of 16-inch rifles. Breeches are loaded with smokeless powder neatly stitched in silk bags. In the manufacture of smokeless powder, caustic soda is used to purify the cotton linters.



TORPEDO PLANES are poison to enemy warships. Whether based on land or sea-roving carriers, U.S. warplanes burn staggering quantities of lubricants and high octane gasoline. In replenishing vital supplies of fuel, oil refineries employ caustic soda to remove objectionable sulphur compounds from petroleum products.

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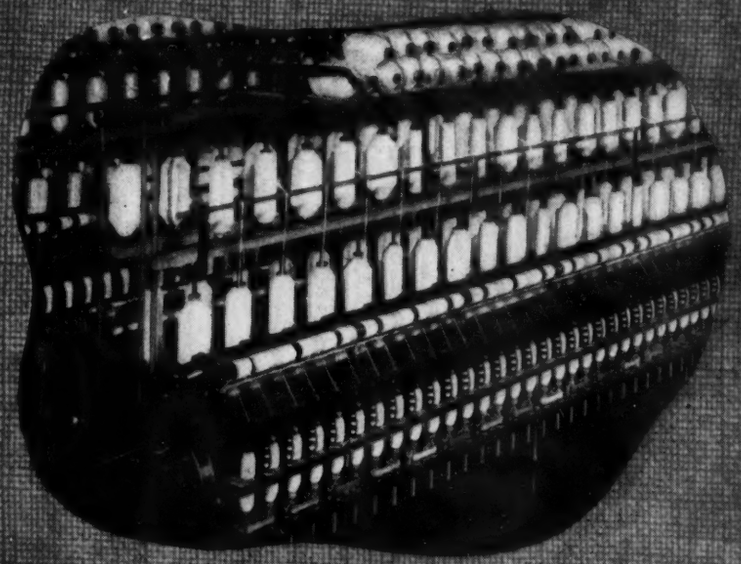
CONVERSION OF TEXTILE MILLS to needed military supplies is further covered in our June issue with a detailed description of methods used in changing-over carpet manufacturing facilities to production of Army blankets. Also information will be given on manufacture of sand-bag fabrics by mills not formerly engaged in this type of work. The Washington side of this important conversion policy will be covered by our staff at the capital, and by other stories as developments require.

Intraplant transportation methods, which are assuming greater importance than ever because of actual or impending labor shortages, will be described and illustrated in an article covering numerous installations in various plants in the several branches of the industry.

Additional data on knitting rayon full-fashioned hosiery will be presented in the series by Max Miller. Tentatively scheduled are articles on mildewproofing Army fabrics, production of non-felting wool, and warp sizing of rayon.

The annual meeting of the National Association of Hosiery Manufacturers (being held as we go to press) will be covered in June, along with the annual meeting of the Underwear Institute, scheduled for May 21.

RIGHT NOW... fewer ends down



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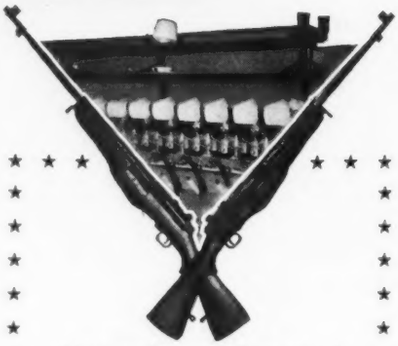

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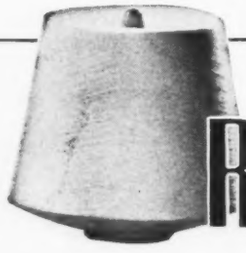

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TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

Let's Start from Scratch—NOW

TO WIN THIS WAR, we need an entirely new start, a start from scratch, NOW, as of today, not as of last week, or last month, or Dec. 7: and particularly not as of any time during those 18 lost months between the fall of France and the attack on Pearl Harbor.

Our current national disease is recrimination. It is a contagious malady. It is so easy to point out that we let Japan have scrap and oil which enabled her to start her treacherous attack upon our possessions and our boys; that we did a half-hearted job of converting our industry to a war basis; that we tackled inflation by piece-meal methods instead of by an all-out offensive; that we perpetuated a depression-born 40-hour week as a limitation on war production; that we allowed strikes to hold up vitally-needed output; that we permitted wholesale profiteering on the part of certain groups of industrialists; that we failed to build up adequate stock-piles of critical materials; that we failed to create a synthetic-rubber industry; that we boon-doggled along even after Pearl Harbor; that we were months late in starting to unmobilize the Fifth Column; that all groups adhered to, not business as usual, but business and labor and agriculture made unusually fat and profitable through war.

Sure, we did all those things, and failed to do all those things, and many, many more. But let's face the fact squarely: The reason we committed those crimes was that we as a nation had no concept of the job ahead of us. Prior to Pearl Harbor, the great majority of American citizens thought of war as a remote thing, and as a chance to get rich quick. Even in the first three months after Pearl Harbor, there was still the belief that we could beat the Japs with one of our arms tied behind us, and that then we'd go get what the Russians had left of Hitler.

Let's be honest: Practically all of us thought that way. There will, of course, be any number of people who will announce, after the fact, that they knew it all the time: just as there were many people after the 1929 stock collapse who were eager to tell their friends that they, too, knew it all the time, and that they had sold out all their securities on some date prior to that fateful October. But the hard cold fact remains—today as it did in 1929—that the great majority of Americans have been, and were, caught with their pants down.

SO, WHERE DO WE GO FROM HERE? If we want to win this war, we'll forget every crime which we, the American people, committed, or which was committed in our name.

We'll start today, this minute, to convert every ounce of human energy inherent in 130,000,000 people toward one sole objective.

We'll stop worrying about tires, and golf-balls, and girdles, and cuff-less trousers, and 40-page-women's-dress specifications, and job-security, and wage-levels, and individualism.

We'll divert every ounce of critical materials into one channel, no matter how many men lose their jobs, or how many companies lose their profits, in the process. There are jobs ahead for all Americans who want to help win the war—not jobs productive of profits, but jobs productive of the glory which comes to those who fight, as did our forefathers, to preserve the ideals on which this country was founded.

SPEAKING SPECIFICALLY for the textile industry, this writer feels that there is *no* excuse for the continued civilian diversion of *any* part of the supply of textile raw-materials which is needed in the war effort. If *all* the wool now in sight is needed for military purposes, then *no* wool should be used for any other purpose. The same goes for Nylon, strong rayons, long-staple cotton.

If nobody can get a new suit, or a new dress, or a new girdle, or a new pair of stockings, or a new hat, so what?

Our suggestion, on that problem, is that complete rationing be put into force today, NOW, before it is too late. A girdle would be a useless article of clothing, or of protection, if the Japs and the Nazis beat us.

And they *are* beating us. That is the only fact worthy of recognition.

This same line of reasoning goes for every industry in this country.

It's time to forget everything that has gone before; to start from scratch, NOW.

Sure, we could beat the Axis eventually. But that thought would not be a consoling one if, while we waited for "eventually," the Axis beat us in the mean-time. The time is NOW. We have got to win in 1942 and 1943, *in order to save the maximum number of our boys from slaughter.*

Skip the recriminations. Remember the stake. The stake is our boys, now dispersed over a world-wide battle front. *They* don't care about the 40-hour week, or about Jesse Jones, or about tire shortage, or about gasoline rationing, or about cuffs on trousers, or about no vests. Do *we* care more about those things than about *them?*

Douglas G. Woolf

THE EDITOR SAYS

You're in the Army Now

BY THIS TIME, it must be apparent to all textile manufacturers that you're in the Army now. Also, that you'll never get rich, and so forth, in good Army parlance.

Which is all to the good. The defense honeymoon, during which people made money out of a war fought somewhere else, is over. The war tragedy, during which Americans are going to lose sons, homes, jobs, money, living standards, and what have you, is here.

The price ceilings, priority controls, and other forms of regulation experienced to date by textile manufacturers have been merely a tasting sample of what was in store, and of what is just now reaching the actuality stage.

From now on, textile manufacturers are going to be told what they should make, what raw materials they can have, what equipment they can buy, what profits they can keep, what individual incomes they can get, what prices can be realized for all commodities, and where they will be sent if more productive use of their personal services can be found elsewhere.

In other words, they will be drafted. But so have their sons been drafted. And from what we know about fathers, from very personal experience, we advance the thought that they won't want to contribute less to the war effort than their sons do.

Unfortunately, there is a longer waiting period before business controls can be made universally effective than there is before drafting of young men for the Armed Services can be put into action. That is due to the fact that it is much easier to pull a young man out of civilian life and put him into a uniform than it is to convert, let us say, a carpet plant into a duck mill.

When a young man is drafted into the Army, he goes away and leaves his civilian problems to his family, his former company, his community, and his governments—Federal, State, County and Municipal.

When a manufacturer is drafted, through plant conversion, or service in Washington, or shutting-off of materials and equipment, he has no depository for his problems. He retains a plant, with equipment, mortgage, interest rates, taxes; employees with families, obligations, houses, children; a family of his own, with school requirements, insurance payments, past obligations.

Consequently he must perform the dual role of a soldier and a civilian. During part of his waking hours, he must do everything he can, specifically, to aid the war effort. During the rest of his waking hours, and a good part of his sleeping hours, he must devote his thought to the job of keeping his company solvent, his employees on the pay-roll, his community active, his future and that of all those dependent upon him, protected.

That civilian phase of the drafted manufacturer's life means the maximum of "business as usual"—a phrase which unfortunately came into disrepute through our national unawareness of the emergency, but which is just as essential toward winning the war as is military victory.

Some day, the bill for this war will have to be paid. It can't be paid out of the deficits of defunct companies, or out of the lost jobs of salesmen, promotion managers, advertising managers, association executives, and other temporarily eclipsed man-functions.

Our civilian economy must be kept rolling to the maximum extent compatible with all-out prosecution of the war effort.

That's not easy. But it's not impossible.

You're in the Army now, Mr. Textile Manufacturer—as a soldier and as a responsible civilian. If you perform both parts of your job to your maximum possibilities, you will be as much a hero of this war as any man in the frontline.

Textile Research War Council a Vital Move

The launching of the Textile Research War Council at a recent meeting of trade-association executives in New York is a vital step toward an all-out war effort on the part of the textile industry. The Textile Research Institute sponsored the conference jointly with the Textile Foundation. The association executives represent all major branches of the industry.

This move is an expression of research at its best. It recognizes the flexibility of research. It is true that students of the problem regard fundamental research as the main need of the industry over the years. But, in an emergency, research has another aspect. It needs a different tempo. It must be called on to solve the immediate problems created by the war. That is what the conference of textile-association executives proposed. That is what will be put into effect.

Research dollars have been known, rightly, as patient dollars. But, in war, they become impatient dollars. They strain at the leash, anxious to get at the enemy.

That is the versatility of research. It can do a slow, plodding job to return dividends a decade from now. Or it can steam up and do an immediate job, with dividends in a month or in a week.

This program also proves the wisdom of the new working arrangement between the Textile Research Institute and the Textile Foundation. The all-out cooperative attitude of the textile-association executives at the recent conference reveals an industry-wide recognition of that fact.

This means a new tempo of textile research: Research to beat the Axis.

Raise the Sights on War Bond Purchases!

No matter what your organization has done to date in the purchase of War Savings Bonds by the pay-roll allotment plan, it isn't enough. The national quota should be doubled. The goal is 10% of the annual income of every employed person.

A new drive within each company is necessary. In too many cases, token purchases have been encouraged to bring about nominal 100% subscription. This isn't a token war.

This is still a voluntary field of action. Personally, we think it should be a compulsory one, and we hope and believe it will be eventually. Meanwhile, each individual should condition himself by subscribing at least 10% of his income.

It's the only painless method of participating in a war. It means that safe savings will be established; that acquisition of unnecessary gadgets will be curtailed; that inflation will be checked; and, more important than all, that each participant will have the glorious satisfaction of buying guns and airplanes and tanks to exterminate Hitler and Hirohito.

Textiles After Four-Year Record

Activity index for first-quarter makes bid for fourth successive annual high

By DOUGLAS G. WOOLF

FROM THE TEMPO of the first quarter of 1942 in textile production, the industry is all set to try for a fourth successive record year. TEXTILE WORLD's Textile Mill Activity Index for the first three months of this year shows an increase of 11% over the corresponding period of last year. The activity has been at the annual rate of 96% over the assumed normal (1923-25) which means that our tentative index for 1942, based only on the first quarter, is 196, as against the previous record of 188 in 1941. It also compares with the records set in the preceding two years: 142 in 1940 and 138 in 1939. Details from the year 1929 to date are shown in Table I. Month-by-month trend of activity for the same period is shown in Chart I.

Table I—TEXTILE WORLD'S Textile Mill Activity Index

1923–25 average = 100

1929	115
1930	89
1931	93
1932	83
1933	104
1934	90
1935	105
1936	124
1937	125
1938	103
1939	132
1940	142
1941	188
1942 (first quarter)	196

Of the four major fibers, there are only three left, silk being no longer in the picture. Of those three, cotton consumption in the first quarter of 1942 was approximately 13% over that of the same period of 1941, while rayon consumption, including that of both filament and rayon staple, was 17% up. Wool consumption showed a slight increase.

Unfortunately for many manufacturers and their employees, this overall picture shows only a part of the story. While textile mills able to produce anything required for military use or for essential civilian use are hard put to turn out every additional pound of yarn or cloth possible, there is an increasing number of mills which are affected in the other direction by limitations of raw material for non-essential civilian use. That trend will be intensified, but it is difficult at this time to indicate how rapidly the tendency will grow. For at least the first half of this year, that will have little effect on the total activity since there will be a market for all military and essential civilian goods. The length of time during which the former can continue to carry the industry along depends of course upon the progress of the war and the number of men it is decided to activate.

All in all, it can be stated that the performance of the first quarter of this year was statistically swell, but pregnant with trouble for a great many units in the industry. Which is to be expected in war-time.

JUST WITHIN THE LAST MONTH, two major actions were taken in Washington which hold prospects of revolutionary economic change for the industry. One was the conversion order which transferred certain percentages of the equipment of a varied group of mills over to the production of other and more essential fabrics. It is safe to say that this was but the fore-runner of many similar orders, each of which will have a profound effect upon the destiny of groups of textile mills.

The other major action was the issuance of the new General Price Regulations which automatically disposed of the flexible schedules whereby ceilings on cotton products were tied to the fluctuations in the price of raw cotton. Here, too, the potential effect is enormous. Both these actions, and many others, are described in the pages which immediately follow.

Under such conditions, and facing such prospects, it is easy to see that all past yardsticks by which to measure the industry's future are gone.

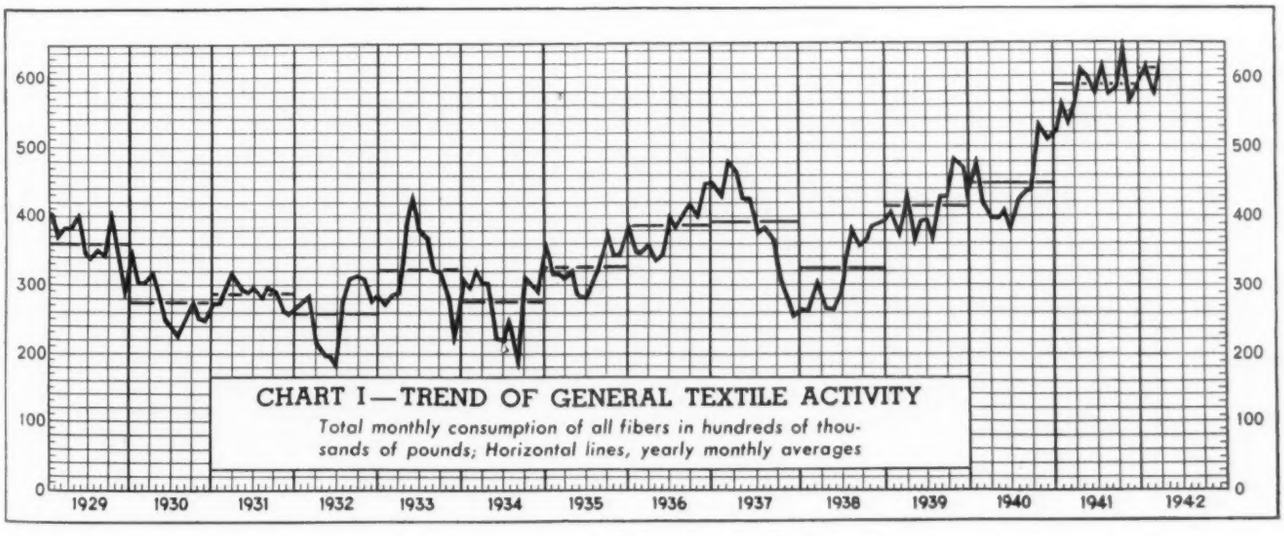

CHART I—TREND OF GENERAL TEXTILE ACTIVITY

Total monthly consumption of all fibers in hundreds of thousands of pounds; Horizontal lines, yearly monthly averages

Industry Gets Into Wartime Swing

Conversion will step up 1942 cotton goods production to 14,000,000,000 yd.

McGRAW-HILL WASHINGTON BUREAU

PAUL WOOTON, Chief Correspondent
Blaine Stubblefield
Irvin D. Foos Carter Field
Robert Colborn M. G. Maury

By BLAINE STUBBLEFIELD

THINGS DONE in Washington recently by, for, and to the textile industry:

War Production Board issued orders and prepared others which will double the production of osnaburg and bag sheeting, and put the cotton weaving industry about 88% into essential war and civilian production. (See page 60.)

WPB issued General Limitation Order L-83 restricting deliveries of many types of industrial machinery, including textile machinery. (See page 62.)

Office of Price Administration put practically the last items of the cotton-textile industry under its price lid with amendments to Schedule No. 118. OPA issued amendments to Schedule No. 23, extending maximum price regulations to cover more than 90% of rayon gray goods, and adjusting prices already under ceilings. Other OPA and WPB orders are detailed in addenda to TEXTILE WORLD's War Manual, beginning on page 63.

The War Production Board mildly reshuffled its Textile, Clothing and Leather Goods Branch, and issued a list of personnel showing who does what. This list is shown in full on page 64.

THE CONVERSION SECTION, a new unit of the Textile, Clothing and Leather Goods Branch of WPB (TCLG Branch from now on), deserves some special comment. This is a brand new branch, but you may assume it had a hand in the huge task of writing the osnaburg and bag sheeting conversion order. Ralph E. Loper is chief. Mr. Loper came to WPB from the presidency of the Ralph E. Loper Co., Fall River, Mass., and Greenville, S. C., mill engineers and cost accountants. Mr. Loper has a staff of experts working with him on conversion problems, which increases in scope and importance as the war gets into stride.

There is talk of large-scale conversion in the rayon industry. Conversion of carpet and rug looms to duck, blankets and heavy apparel cloth is going ahead, with military orders already placed and 2,000 looms scheduled to be used.

All this volume of business seems to have given Price Administrator Henderson the impression that some manufacturers are making too much profit, and reports are heard in town that OPA will re-examine costs and prices in some lines. All Government agencies that control prices and rates are constantly re-checking, so there will be nothing unusual about any such action, or about any price readjustments.

For the first time in the recollection of Washington officials, there is concern over a possible cotton shortage, if the war lasts long enough. Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, says that we will come to August with a 10,000,000-bale carryover, of which 4,000,000 bales will be of low grade. Of good cotton there will be only a normal carryover, and the surplus we have carried for years will have disappeared. He says he is concerned over this year's crop too; fertilizers, insecticides, and farm labor will be short.

TO MEET WAR NEEDS for sandbags, camouflage cloth, food and agricultural bagging, the War Production Board on April 21 ordered conversion of cotton mills to raise the annual production rate of osnaburg from 263,500,000 yd. to 660,000,000 yd. and bag sheeting from a rate of 488,000,000 yd. to 855,000,000 yd. Mills were given 30 to 60 days to make conversions.

This order, WPB L-99, converts 12.9% of the industry, in addition to 37.3% already on defense orders. Other WPB conversion orders now being prepared, to assure military and essential civilian supplies of cotton cloth, will require 38.1% more. Thus, cotton textile weaving capacity allocated to essential war and civilian needs will be 88.3% of the total when all the contemplated orders are issued.

In addition to this conversion program, WPB has a stand-by program which contemplates conversion of woolen mills and carpet mills (not already converted to duck, blankets, etc.) to the production of "certain types of cotton cloth for bagging, wrapping, sand bags, camouflage cloth, etc." This conversion would be aimed at building a reserve stockpile for emergencies.

Necessity for these drastic moves against normal civilian supplies stems back to shortage of shipping to haul jute from India. You will recall that some weeks ago OPM allocated two-thirds of the burlap and osnaburg to war needs, and one-third to crop and food bagging. Various expedients, such as baling wool and bulking grain were planned, but hope of avoiding a serious shortage was small. Now, osnaburg probably will substitute burlap almost entirely, except for wool bagging. The cotton lint gets into the wool and dyes unevenly. Even that will be tolerated in the end.

Frank Walton, Deputy Chief of the Textile, Clothing and Leather Goods Branch of WPB, said the plan now being worked out calls for increasing the production of cotton fabrics from 9,045,000,000 sq. yd. in 1939 to 14,000,000,000 this year and 15,000,000,000 in 1943.

Orders now being prepared will allocate to civilian uses the balance of loom capacities not allocated to osnaburg and bag sheeting, as listed in the accompanying table. Mr. Walton said his committee believes that, by cutting out luxuries and non-essentials and by securing the above estimated increased production, all essential civilian needs can be taken care of in addition to the war demands.

Denim conversion is cited as an example. Order L-99 says to the denim mills that they are to convert 20% of their looms to osnaburg, but the balance, or 80% of the looms, will be allocated to denim under a separate order. This denim is needed for overalls and work clothes for workmen in war plants and in industry and on the farms. The statement emphasizes WPB's belief that all essential needs for these work clothes can be met out of the 80% balance.

The Cotton-Textile Institute estimates that the order converts an additional

20,000 looms to the manufacture of bagging materials and that production now will be at the rate of 1,500,000,000 yd., or enough to meet all essential requirements. In normal years, says CTI, about 650,000,000 yd. of osnaburgs and sheetings are used for bags and about the same amount of burlap, which is virtually cut off by extension of the war to the Bay of Bengal. Approximately 68,000 looms are operating on fabrics which, under the order, must give way to manufacture of bag materials.

WPB's announcement says that the order was issued after months of careful investigation of its feasibility and after it had been dovetailed into a complete conversion plan for the cotton-textile industry, and the amount of each fabric necessary for essential civilian needs had been determined. Plans call for fabrics with minimum picks, and made, whenever possible, full width of the looms to secure more square yards.

MILITARY CAMOUFLAGE now takes enormous areas of cloth. Painted cloth is used to hide whole sections of airports, to conceal roads through the woods, to conceal factories, gun emplacements, machine gun nests, all sorts of military works, factory buildings, and whatnot. We may have to cover sizeable patches of ground the world around with painted cloth from American looms.

Already the Textile Branch has samples of cotton bagging made completely in woolen mills, and samples of cotton yarn spun on woolen machinery and woven in carpet mills. Still other samples have been woven in upholstery mills. Mr. Walton says all these fabrics are useable for special purposes in the war effort. He reminds the industry that a number of carpet mills already are making cotton duck and still more are converting to it.

A number of cotton mill operators have offered their services in helping woolen or carpet mills in making any of these products. Some of the carpet manufacturers have visited cotton mills for this purpose. The different Sections of the Textile, Clothing and Leather Branch of WPB handling these different segments of the textile business are all working together to develop these special fabrics. The Textile Machinery Section is cooperating and OPA has offered its full cooperation in this program in the development of this new production.

WPB ADVISED carpet and rug manufacturers at an industry advisory committee meeting last month to investigate the possibility of using their stocks of carpet wool on production of blankets and apparel fabrics. Board members stated that further allocations of jute yarn for floor coverings after the end of April seemed improbable. A committee member displayed a blanket made to Army specifications, composed entirely of carpet wools from South America, and which he said could be sold at $1.50 to $2 cheaper than the Army standard. Discussed also was the possibility of spinning coarse cotton yarns for bagging on carpet mill equipment and the possibility of using storage space owned by carpet mills for storage of the nation's stockpile of wool for military purposes.

A survey of carpet and rug mills made by the Institute of Carpet Manufacturers of America and reported by Leroy A. Beers, president of the Institute, in the *Journal of Commerce* indicates that nearly 2,000 looms have been converted thus far to weaving cotton ducks and wool blankets. Average cost of converting a carpet loom to duck weaving is estimated at $200 to $300; to blanket weaving, from $1,000 to $1,500. Plans are now underway which include the production of camouflage materials, bagging, webbing, agricultural bags, brattice cloth, filter cloths and osnaburgs at an early date.

On April 22 carpet and rug manufacturers attended a forum on duck manufacture at the plant of Alexander Smith & Sons Co., and inspected velvet and tapestry looms which have been converted to weaving of duck. (See page 69.)

CONVERSION ORDER L-99

TO RUN ON OSNABURG:

20% looms on mattress and pillow tickings.
20% looms on cottonades and suiting coverts.
20% looms on colored-yarn suitings.
20% looms on denims.
20% looms on pin stripes and checks, hickory stripes.
20% looms on drapery, upholstery, tapestry fabrics.
20% looms on turkish and terry woven towels and toweling.
20% looms on huck, damask, jacquard towels and toweling.
100% looms on osnaburg of any construction, must produce the constructions specified in the order.
40% looms on outing flannels.

TO RUN ON BAG SHEETINGS:

40% looms on other napped fabrics except canton flannels, work shirt flannels and blankets.
40% looms on soft-filled sheetings.
50% looms on Class C sheetings.
100% looms on Class A and Class B sheetings.

Last month M. J. Whittall Associates, Inc., Worcester, Mass., announced that it has begun conversion of its machinery to duck manufacture, and Samarkand Rugs, Inc., Rock Hill, S. C., is converting to war work, including shelter tent duck, osnaburgs, and worsteds.

American Velvet Co., Stonington, Conn., has purchased 80 duck looms and will seek contracts to weave Army ducks. At a meeting of the newly-formed Eastern Textile Association for War Conversion, representing 60% of the upholstery fabrics industry, it was stated that 1,000 plush looms are available for conversion to duck manufacture, which, on a three-shift basis, could produce 40,000,000 yd. a year.

Although there was no Government demand for pile fabrics, laboratory technicians have been experimenting on samples which have attracted the attention of Federal procurement offices.

A survey of the hosiery industry is under way to ascertain what facilities in terms of machine tools, skilled workers, factory floor space and storage space are available for war work.

* * *

The Quartermaster made fast progress in placing contracts for the all-time-high call for 351,000,000 yd of cotton goods; awards since the call had been run up to a total of 250,000,000 yd at the time of this writing. QM told TEXTILE WORLD it was doing all right with its huge procurement of wool goods, including 74,000,000 yd of woolen and worsted cloth and 10,000,000 Army blankets. These awards are reported being evenly distributed. Overall total of wool awards is not given. More and more textile procurement becomes secret because even the type of cloth sometimes gives the enemy a hint as to grand strategy.

In mid-April contracts were announced for 18,000,000 cotton knit undershirts, and 18,250,000 pairs of cotton drawers. Contracts for the drawers went to 25 mills. Bids on 9,000,000 part-wool undergarments were due at Army Depot May 4. No bid for less than 25,000 garments per plant was considered and manufacturers have three options in regard to type of wool used. They may quote on all domestic wool and/or 75% domestic and 25% foreign wool and/or 50% domestic and 50% foreign. On April 23, QM contracted for 13,592,000 pr. wool socks.

The Navy Department sent out notices to cotton duck mills of its need of 15,400,000 yd. of numbered duck.

Contracts for 39,174,364 yd of mosquito netting were announced April 22. Of this, more than 36,000,000 yd were of the woven type; 2,369,370 yd tricot; 227,000 yd bobbinet; and 343,160 yd nottingham.

Machine Priorities Head Up in WPB

General Limitation Order L-83 concentrates procedure—Details being planned

THE TEXTILE-MACHINERY PRIORITY SYSTEM, which has gone through a lot of changes and which has been vague to the average man in the industry, underwent another change last month but to date is not materially clearer. The War Production Board on April 9 issued General Limitation Order L-83 prohibiting manufacturers from filling any orders for production or delivery of 15 types of new, second-hand or reconditioned machinery, including textile machinery, unless they bore WPB approval. The limitation order was first announced as effective that day, April 9, but the effective date was later postponed to May 15.

It had been hoped that, before this time, information would have been available indicating the exact effect of this order upon the textile-machinery priority situation, and also outlining the definite procedure to be followed by both machinery manufacturers and mills under the new arrangement. However, at the time of going to press, no such statement had been issued. Pending that, it can only be stated that the best interpretation of this order is that it does not affect so much the quantity of textile machinery that can be made and shipped, as it does the procedure to be followed in placing and filling orders for such machinery.

On the first point, it is felt that the restrictions were already severe and that mills have been able to secure major types of equipment only on high-rated orders. On the second point, that of procedure, what the new order appears to do is to concentrate the whole textile-machinery priority system in WPB. In the past the Quartermaster Corps, for example, has been clearing requests for priorities. It is understood that from now on the QM will merely pass these to WPB. From the standpoint of effective organization, it is generally felt that the more such situations can be concentrated in one place, the better.

The above analysis, however, is entirely tentative and unofficial. It is hoped that, by the time our next issue goes to press, exact and complete information will be available.

The purpose of the limitation order in general, as affecting the 15 types of industrial machinery covered in it, is of course to stimulate the conversion of machine tools and skilled labor from industrial machinery to ordnance and other war equipment.

The postponement of the effective date until May 15 was made, according to the WPB statement, "to avoid disruption of schedules in plants preparing to convert to the output of war supplies." The amendment nevertheless said that provisions of L-83 remaining in force (in the interim before May 15) made it unlawful for manufacturers or distributors to accept orders or to make deliveries without approval of WPB.

But it said that manufacturers were permitted to continue production on orders that were on their books before L-83 became effective, that is, before April 9. The manufacturers had no guarantee, however, that they would be permitted to deliver such orders to the persons who had given the orders. In fact, the amendment provided that such deliveries were not to be made without approval of WPB.

The head of the Textile Machinery Division is Robert S. Dempsey, whose authority to control the conversion program and the approval of orders for such textile machinery as will be produced, is delegated by Nelson and is therefore extensive.

APPROVED ORDERS, as referred to in General Limitation Order L-83, include those of the Army and Navy, some other Government agencies, Governments of the United Nations, Lend-Lease operations and any orders bearing an A-9 or higher preference rating issued at any time on an original PD-1, PD-1A, or P-19H certificate, or on a PD-3 or PD-3A certificate countersigned before date of issue of the order.

Other machinery than textile covered by the order includes equipment for leather working, tanning, packaging and labeling, pulp and paper making, printing and publishing, baking, bottling, cotton ginning, shoe making, and others.

Small orders in some of these categories may be filled without restriction, but in the textile machinery category *all orders* are covered, without exceptions.

However, no prohibition is placed upon deliveries of less than $1000 worth of parts to repair or maintain a single piece of textile or other existing machinery, or a single piece delivered hereafter. Likewise there is no prohibition on deliveries of parts worth more than $1000 in cases where there has been an actual breakdown or suspension of operations because of damage or destruction of machinery.

Manufacturers are not prohibited from delivering machinery to a distributor to fill an approved order actually in hand. Manufacturers are not prohibited from delivering to a distributor to replace machinery he has delivered on an approved order. But, to fill orders already on their books on the effective date of WPB Order L-83.—orders which do not fall within the approved classifications—manufacturers must get specific permission from WPB's Director of Industry Operations. The application must be accompanied by a complete description of the machinery to be sold and the use for which it is intended. These restrictions apply on all kinds of orders: purchase, lease, rental, renewal of lease or rental, or otherwise.

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Addenda to Textile War Manual

CEILINGS NOW ON PRICES OF ALMOST EVERYTHING

GENERAL MAXIMUM PRICE REGULATION, which bids the roaring economic waves be still, freezes the prices of most things used by 130,000,000 Americans and the rents in areas occupied by 76,000,000. This vastly comprehensive document, intended to make the war and post-war living cost billions less by stopping inflation, immediately affects the textile industry.

But because this industry has been taking its price control in multiple orders for months, this across-the-board jolt is comparatively light. The order was issued April 28, effective for manufacturers and wholesalers on May 11, and for retailers May 18.

Most of the price orders now on the industry remain as they are; but the sliding-scale textile products ceilings based on "spot" cotton quotations had to be stopped from sliding. On the day after GMPR was issued, OPA issued an order amending six schedules applying to cotton. These changes peg the previous sliding scale to a spot cotton price of 20.37c. per pound, which is the highest quotation for actual cotton sold at the ten leading southern markets during March, 1942.

Administrator Henderson emphasized that if the objectives of GMPR are to be attained, cotton yarns and textiles must not be allowed to advance beyond the highest prices of March, the key to the whole general ceiling program. The immobilization of the sliding scale is designed to prevent wholesale prices from creeping up on retail prices.

Henderson states that the ceilings are amply high to permit raw cotton prices to rise above any levels specified in the Agricultural section of the Emergency Price Control Act of 1942. This section says that the Administrator shall not establish a maximum price which would return to the farmer less than 21.47c. per pound for his cotton, which is equivalent to a ten-market spot price of about 22c.

PRICE CEILINGS AND AMENDMENTS BY OPA

Cotton Products, Six Price Schedule Amendments—Supplementing the General Maximum Price Regulation, OPA issued amendments to six price schedules applying to cotton products, which peg the sliding-scale "textile" ceilings on the basis of a spot cotton price of 20.37c. per pound. This represents the highest quotation registered for actual cotton sold at the ten leading southern markets during March, 1942. Schedules covered by the six amendments, which became effective May 4, are: No. 7, Combed Cotton Yarns; No. 11, Fine Cotton Gray Goods; No. 33, Carded Cotton Yarns; No. 35, Carded Gray and Colored-Yarn Cotton Goods; No. 89, Bed Linens; No. 118, Cotton Products.

Cotton Products—Maximum Price Regulation No. 118, effective May 4, puts practically the last items of cotton products under price ceilings. It covers chiefly manufacturers' sales of "cotton products" and provides a method for determining ceiling prices for special constructions of textile merchandise prepared by large cotton mills for consumers. Wholesalers, jobbers and retailers who perform their normal service are exempt from the provisions. The regulation establishes maximum prices for cotton products at lower levels than the present market and brings them into line with cotton yarn and textile prices already under ceilings. Some combed cotton goods are not yet subject to OPA regulations. Products under this regulation include: blankets, towels, bedspreads, ginghams, table-cloths and napkins, corduroys, diapers, cottonades, whipcords, flannels and chambrays. In addition, "unfinished" goods covered are goods of 42 inches and over, industrial fabrics, ducks, shirting, twills and drills, sateens, gabardine and reps. A base pricing period from July 21, 1941, through Aug. 15, 1941, inclusive, is established. Maximum prices are allowed to fluctuate in conformity with raw cotton; later pegged.

Cotton & Rayon Gray Goods—Investigation by the OPA has confirmed reports from the textile market that some mills, which formerly sold gray or unfinished, goods exclusively, have been refusing to furnish such goods to their regular trade. Instead these concerns have been requiring buyers to accept bleached or partially finished goods at exorbitant markups above the established maximum prices for gray goods. Such violations of cotton and rayon gray goods ceilings must be halted immediately, says OPA.

Cotton, Rayon & Mixtures—Sellers of finished piece goods made of cotton, rayon or mixtures subject to Temporary Maximum Price Regulation No. 10 may not rely on "escalator" clauses to increase their prices above the maximum levels established by that regulation. Temporary maximum prices were imposed at levels no higher than those prevailing during the base period, March 7 to 11, 1942. The original price action was taken March 13 to check a rapid and unwarranted rise in prices of finished piece goods and the statement further bars any advance. While the regulation does not apply to sales at retail, finished piece goods are used to make such consumers' items as women's and children's dresses, women's suits, coats, house-coats, pajamas, men's shirts, curtain and drapery material.

Denims, Sanforized—Two corrections in "sliding-scale" maximum prices for Sanforized denims in OPA tables covering spot cotton quotations in the 20 to 22c. per pound range were issued April 23 in Amendment No. 2 to Revised Price Schedule No. 35 (Carded Gray and Colored-Yarn Cotton Goods). Prices set forth in Amendment No. 1 under Table IV were corrected for two categories. "Sliding-scale" ceilings for 2.20-yard Sanforized denims are raised ¼c. per yard, and for 8-oz. (2.00-yard) Sanforized denims are lowered ¼c. per yard.

Hosiery & Underwear—Leaders of both the hosiery and underwear industries have been called to meetings with the OPA in Washington to discuss prospective action on price ceilings.

Processors' and wholesalers' prices of finished piece goods made of cotton, rayon and their mixtures were placed under a formal OPA price regulation, April 28, at substantially lower levels than the temporary ceilings imposed last March, in Order No. 127. At the

Addenda to Textile War Manual

same time, OPA in a companion order, No. 128, established maximum charges which finishers may make for their cost of transforming gray goods into finished textiles though such processes as bleaching, dyeing, printing or mercerizing. These two regulations—one establishing the margin which a converter may charge to cover his overhead and profit, and the other setting forth what his costs for processing shall be—were among the broadest issued to that time affecting prices of cotton and rayon textiles as they reach the consumer.

Rayon Gray Goods—A regulation extending maximum prices to cover more than 90% of all rayon gray goods, and at the same time adjusting prices already under ceilings to correct a serious shift in production away from types of goods needed by clothing manufacturers and consumers, was issued April 18. Revised Price Schedule No. 23 as amended supersedes the former price schedule bearing the same number and became effective April 21, 1942. It readjusts the maximum prices for a majority of the 52 constructions covered by the original order and extends the ceiling to take in 177 additional cloths at lower than present market levels. Intent of the action is to make production of any of the 229 constructions regulated equally attractive to the weaver from the standpoint of "per loom" profits. The maximum prices of some of the 52 constructions listed in the previous schedule required readjustment in instances where OPA cost studies revealed that ceilings were out of line with the general price level. Following the setting of these "per loom returns" on the originally regulated constructions, ceiling prices were established for the 177 additional fabrics at lower levels so that the "per loom return" for them is similar to those previously listed in the schedule. Reports submitted to OPA indicate that some weavers have been selling these constructions at substantially higher prices than those established in the schedule. In Amendment No. 1 to Revised Price Schedule No. 23, as Amended, effective April 22, changes are made in the description of one twill and one satin construction.

Wool, Waste—Ceiling prices for raw and processed wool waste materials, the most important available substitutes for new wool in men's and women's clothing and other articles, are established by Maximum Price Regulation No. 123, effective April 28. Specific dollars and cents prices set in the order cover 2,865 items under six general classifications of wool waste materials: wool waste (wool fibers recovered during manufacturing processes), new wool clips (fabric trimmings from garment manufacture), knitted wool clips, graded old wool rags, mixed old wool rags and Government new wool clips. The maximum prices are based on levels which prevailed during Oct. 1 to 15, 1941. The new regulation supersedes those provisions of Revised Price Schedule No. 58 as amended (Wool and Wool Tops and Yarns) that applied to wool waste materials. The term "wool" is redefined by an amendment to Revised Price Schedule No. 58. Under Amendment No. 1, effective April 28, wool waste, clips, rags and reworked wool are eliminated from the definition of wool.

PRIORITIES AND ALLOCATIONS—AMENDMENTS BY WPB

Agave—The Agave Fiber Order (M-84) was amended April 13 by the WPB to prohibit use of Java Agave Sisalana, for manufacturing wrapping or binder twine. The amendment allows free importation of wrapping twine. Restrictions as to sales are not changed. Users of wrapping twine are permitted more flexibility in their inventory; permitted because of its seasonal use. On April 23, it was further amended to permit the manufacture of more binder twine than was previously permitted.

Agricultural Bags—Order M-107, which assigns a preference rating of A-2 to purchase orders by bag manufacturers for cotton fabrics suitable for "Agricultural Bags," has been amended April 27 to include additional commodities for which such bags may be used. They are shellfish, hops, brewers' malt, tobacco and nursery stock, ground poultry grit, manufactured and natural abrasive, grain, and metal parts.

Burlap—WPB has amended the burlap conservation order (M-47) to ease restrictions on receipts of burlap by bag users. Because the use of burlap is seasonal, quotas based on a past year create unnecessary hardships. This is corrected in the new amendment (No. 4), effective April 4. It also removes restrictions on the importation of burlap into this country. Previously no provision was made for the non-

(*Continued on page* 144)

WPB Textile, Clothing and Leather Goods Branch

COTTON SECTION, Chief, T. H. McKinney. *Raw Cotton Unit*, Chief, William R. Meadows. *Cotton Duck Unit*, Chief J. W. Proctor. *Carded Fabrics Unit*, Chief, T. M. Bancroft; Assistant, J. M. Withrow. *Combed Fabrics Unit*, Chief, George Westberg. *Yarn Unit*, Chief, T. H. McKinney. *Thread Unit*, Chief, T. H. McKinney.

CLOTHING SECTION, Chief, H. Stanley Marcus. *Men's Clothing Unit*, Chief, Irving Squires; Consultant, M. J. Baum. *Women's & Children's Apparel Unit*, Industrial Specialist, Mrs. Nina Smithdeal. *Work Clothing Unit*. *Corset Unit*, Chief, James Nields.

DYESTUFF SECTION, Chief, Dr. A. L. Lippert.

FLOOR COVERING & UPHOLSTERY SECTION, Chief, William F. C. Ewing. *Nets and Laces Unit*, Chief, John Bromley, Jr. *Hard Fiber Unit*, Chief, Francis Clark.

KNIT GOODS SECTION, Chief, John Shireman. *Hosiery Unit*, Chief, John Shireman. *Underwear Unit*, Chief, J. F. Nields. *Outerwear Unit*, Chief, J. F. Nields.

RAYON, NYLON, AND SILK SECTION, Chief, Harry Dalton.

SOFT FIBER & PRODUCTS SECTION, Chief, A. R. Howe. *Brush and Broom Unit*, Chief, Philip H. Thayer. *Soft Fiber Unit*, Chief, A. R. Howe. *Felt Unit*, Chief, Hugh Boeddinghaus.

TEXTILE FINISHING SECTION, Chief, G. H. Lanier, Jr.

WEBBING & BRAIDING SECTION, Chief, J. B. McCullough.

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ALLOCATION & APPEALS SECTION, Chief, Bruce Brown.

CONSERVATION SECTION, Chief, F. S. Blanchard.

CONVERSION SECTION, Chief, Ralph E. Loper.

PRIORITIES SECTION, Chief, S. A. Palmer.

A Three-Year War is the Prospect

That's the best hunch one gets out of Washington, offered without guarantee

By DOUGLAS G. WOOLF

THE WASHINGTON PICTURE changes daily. Fortunately, the current changes are all in the direction noted in these columns last month: toward an all-out determination to win the war.

The first question everyone asks when he goes to Washington, and is asked when he gets back to his home-town, is: How long is it going to take to win the war? Obviously, no one in Washington has the answer. But there are certain hunches which an observer can assemble into a rough prediction.

This writer advances his own conclusion, reached by that very unscientific method, and offered without any guarantee whatever: This will be approximately a three-year war. The United Nations, and particularly the United States, will start showing their real stuff next fall, will achieve increasing fury of attack all through 1943, and should beat the tar out of the Axis in 1944 or at the latest in 1945.

Don't ask us to *prove* this. But we can give certain reasons for the belief. Our conversion to a war production basis is already exceeding hopes. Statements by Donald Nelson particularly bear this out. He can never be called a dispenser of sugar-coated pills. And yet he has made it clear that we are now getting geared up to go, as a nation. That presages a "short" war—if one can call three years of hell short.

A negative argument in favor of a "short" war is that the Axis just couldn't stand five or ten years of stalemate. Internal dissension, within both Germany itself and the occupied countries, writes that off as a possibility. The Axis has to win in the next two or three years—or lose.

There is the outside chance that the Axis could beat the United Nations before the United States production surge got over the hump. That always has to be considered. But the present trend of events makes that unlikely.

The No. 1 bottleneck, from our standpoint, is shipping. The prospect of planes, tanks, guns and other war material clogging up at ports and at points of manufacture for want of transportation, is not too remote a one. The U-boat successes in all waters raise that prospect to the status of a menace. Unless that problem can be solved, there will be a lot of production all dressed up with nowhere to go.

The second major problem is supporting the Russians so that they will be in there fighting, even if and when the Germans are driven from their own territory.

To repeat, watch for victory in 1944 or 1945. If it comes in 1943, this writer will have no apologies to make, as a prophet. He'll be too happy to worry about that.

Flexible Ceilings Go Out Window

OF ALL THE MANY RAMIFICATIONS of the new General Maximum Price Regulations—and they are broad enough to touch every manufacturer, wholesaler, retailer and consumer in the land — the most important to cotton manufacturers is the fact that flexible price ceilings on cotton products, tied to the fluctuations in raw cotton, go out the window.

In the place of these automatically adjustable price schedules, there is substituted a frozen level based on a raw cotton price of 20.37¢, the highest average of ten spot markets in March.

What happens, then, if cotton goes up or down?

1. If cotton goes below the 20.37¢ level, cotton manufacturers take the extra profit and are under no compulsion to reduce their prices on yarns or fabrics in proportion to the drop in the raw material.

2. If cotton goes above the 20.37¢ level, manufacturers are expected to absorb the extra cost, and are not permitted under the regulations to adjust their selling prices upward to allow for that added cost.

That is all very simple—in fact, oversimple. The over-simplification stems from the fact that OPA does not anticipate any sharp fluctuations above or below the pegged base of 20.37¢.

But let's suppose, at the risk of lèse majesté, that OPA might be wrong:

1. If cotton should go sharply below 20.37¢, despite the belief of OPA that it won't, how long would it be before OPA would slap on a lower basis for price ceilings on cotton products?

2. If cotton should go sharply above 20.37¢, what then? OPA thinks present manufacturing margins are sufficient to absorb that extra cost. But suppose cotton went to 25¢ or 30¢? Obviously, there is a point at which the added cost could not be absorbed, and contracts would then be assumed at a loss. In that case there would be two alternatives for OPA action: (a) it could make upward adjustments in the now-frozen ceiling basis on cotton products, or (b) it could put a ceiling on raw cotton. The political implications of the latter course are too obvious to bear repetition here; the inevitable delays in the former course are equally obvious.

Consequently, it is evident that OPA has said to the cotton manufacturing industry: Heads we win; tails you lose.

One interesting fact we learned in Washington is that OPA sheds flexible price-ceilings with the relief that comes from the loss of another headache. That, to this writer, is strange. In his opinion, the most constructive action taken by OPA, in connection with price ceilings, was this automatic adjustment to raw-material fluctuations.

Obviously, the present hope of OPA is that raw-cotton prices will be stabilized indirectly through the new regulations. If that hope proves as naive as was OPA's original belief that setting ceilings on prices would automatically restrain demands for wage advances, then the prospect for the cotton-textile industry looks black indeed.

Here is the point: This industry wants control of inflation as much as does any sensible group within our national economy. But it also wants a chance for a fair return on its investment, as part of the process of keeping American enterprise alive during the winning of the war in order that we may have a reasonably sane economy on which to build the peace. To that end, it needs some assurance that added costs of raw material and labor may be recognized in all future price ceilings.

Dame Fashion Must Bow to Mars

Once-free artist now reflects spirit of wartime America conserving for victory

By MARJORIE BELLE CLARK

"FASHION" is the way people live. It is the arts they enjoy and the decor of their homes, the thoughts they have, the clothes they wear! When America produced for pleasure and profit . . . when whatever anyone wanted to buy was manufactured by someone . . . when public demand could run hog-wild-and-sheep-crazy in the hands of slogan fixers and copywriters—then, Americans wanted new "things," new stimulations. And man was free to create what he would. It isn't like that any more. Even those who don't want to admit it know that war has changed all that. The only "as usual" about fashion or business is that each continues to reflect the attitudes of a democratic people. At this moment, all thought and action is centered around meeting an emergency that demands control, restrictions and conservation—to what extent nobody knows.

Being "in fashion" is the privilege of all at a time like this when available commodities must be shared and the uppermost thoughts of all are concerned with victory over the Axis. With this springtime, 1942, the WPB has limited the amount of material that can be used in a garment; silk and Nylon stockings are on their last legs; bright colors are headed for blackout; elastic girdles, all-wool goods and white sheets are going into hibernation for the duration. Through priorities, allocations and shortages, numerous effects and reflections on the textiles of our country can be expected. Let us see what some of them may be.

In order to economize by the use of garment materials "in a modified manner in order to be able to produce more units from existing and future yardages," the War Production Board issued, on April 8, 1942, a restrictive order to women's garment manufacturers. (Similar action had already been taken for men's wear.) By preventing radical style changes, eliminating non-essentials, and setting up style controlling regulations to prevent waste, the order is expected to result in an annual fabric saving of 15%, or 100,000,000 yards. It will add one dress—for a "baker's dozen"—to the twelve formerly made from the same yardage.

The ruling applies to all fabrics except transparent ones and is effective immediately for woolens and on June 19, 1942, for other fabrics. Such extras as matching jackets, coats, scarfs and hoods have been eliminated—as have wool interlinings, french cuffs, fancy sleeves, double yokes and wool pockets. Widths and lengths of garments have been limited and suits with matching coats (sold at a unit price) are taboo.

Fabric limitation to conserve and stabilize the diminishing supply available to civilians is especially necessary if a framework is to be left for designers to build into adequate clothing—of an unregimented type—for the future. Regimentation should be thought of only as a last gasp, for not alone would it impair morale and stifle inventive and creative talent, but, production-wise, it would be impractical with existing manufacturing facilities set up to produce a variety of materials.

It is, however, dangerous to consider any of the WPB regulations as permanent propositions. Further curtailments may take the form of a priorities system in civilian textiles. Men's wear fabric demands may force curtailment in use of such fabrics for women's wear. The lingerie and curtain markets may have to give in to parachutes. Certainly, this is a time for every textile manufacturer to leave no stone unturned in his examination of how he *may* be affected by an all-out war economy.

Fashion sketches from WPB style order showing garment at left as it might have been and at right as it must be under the regulations

FASHIONS THIS SPRING have not really expressed war rationing, but they have positively revealed the confusion and uncertainty of a crowd that didn't quite know what to do about Pearl Harbor. High colors, metal buttons, slide fasteners, brown woolens, full skirts and three-piece suits have been plentiful, but consumers know there'll be no more when present stocks are exhausted. Clothing buying has been alternately panicky and bridled. Piece goods, trimmings and notions have literally been drained from the stores. *A kind of "rainy day" buying has been going on, but every woman knows that she can't hoard "fashion."*

One aspect of prevailing wardrobes that, more than anything else, denotes changing living habits, is the trend toward functionalism in both fabrics and garment design. With women dashing from bed to breakfast to housework in order to be at the Red Cross by noon, there has been a demand for washable "breakfast" or "brunch" coats—a cross between a housecoat and housedress, easily accessible and built for action. For some years, business girls have been perfecting the technique of "basic-dress-with-various-accessories"—it's hitting an all-high right now. They have also given both thought and action to the wardrobe-stretching "extra jacket system." Mixed-and-mated blouses and skirts of different colors and fabrics are not new in fashiondom, nor are the popular combination types of underwear garments. Civilian wardrobes can and will be comprised of last year's wool skirts topped with this year's taffeta jackets, classic rayon and wool suits perked up with a quarter-of-a-yard's-worth of dickie.

And many a high-busted, flare-skirted

black dress from last season will be trapped between made-up legs and a necklace of turquoise macaroni. Ingenious ideas for using "bits" of this or that pop like corn in a popper at a time like this. Indeed, here is one ray of light for "little" and experimental manufacturers—provided, of course, they can lay their hands on relatively plentiful materials. Some of the smaller textile mills—making novelty fabrics and lacking suitable production facilities—cannot be easily converted to military use. Perhaps it would behoove the larger mills to subsidize, in some way, these smaller operators who could now be experimenting with fabrics for the future.

A BY-NO-MEANS-INSIGNIFICANT FACTOR just entering the "functional" fashion picture is the mass induction of America's woman-power into war industry. Here, the clothes are determined by the type of work to be done, and safety precedes appearance. Whether uniforms, coveralls, slacks or smocks, they *must* be of sturdy, launderable fabric, well-cut for comfort and unrestricted movement and without any loose parts to get caught in machinery.

Of wartime civilian fabrics, most will be of rayon or cotton, few of linen, wool or other fibers. Rayon jerseys, taffetas, sharkskins, triple sheers and crepes—all more or less plain fabrics, sufficient in weight so as not to require a matching slip, washable, inexpensive and made on equipment not needed for war materials—are expected to carry the bulk of women's garment requirements along with seasonal cottons. Some seersuckers, denim, chambray, gingham and/or poplin will be available for the summertime, and, for replacing allocated wool, cotton velveteens and corduroys will likely be in great favor next fall. Mixed fiber fabrics, principally staple rayon in combination with wool, mohair and/or cotton, are the answer to many clothing textile problems of next fall.

With wartime conservation of bleaching and dyeing chemicals and engraving metals, we can expect paler colors and fewer of them; and, in printed fabrics, limited coverage and curtailment of the number of patterns and color combinations. With careful "presentation," women won't mind these restrictions (if they even notice them) because, again, these things are not much to give up so that the fighting forces' needs may be fulfilled.

Limitations of materials and manufacturing methods stimulate new thought and invention among designers. Already such dress designers as Adrian, Mainboucher, Sophie Gimbel and Fira Benenson have expressed new utility and

A limited discharge print as used by Fira Benenson of Bonwit Teller, New York, in an evening gown which conforms to WPB order

datelessness in what we have always known as "high fashion." Jewelry designers have come through magnificently, sans metals, with plastics, macaroni, shells, seeds, wood, cork, glass, paint and string. Highly commendable is the work now being done to create rubberless articles, particularly all-fabric corsets. Any designer in that field who's less than a genius is out looking for another job! (Please, Mr. Finisher and Mr. WPB, try not to let anything interfere with the pre-shrinking of corsetry fabrics—*but*, if you find that you must, couldn't you please let the girls know so's they'll take up fencing for their hips?)

TWO NEW YORK MUSEUMS are currently showing costume exhibits to encourage new design talent. At the Museum of Costume Art (April 18 to June 6) will be found an "Exhibition of Costume Sources for the Coming Silhouette" which illustrates the wide diversity possible within the limits of the fabric-saving WPB order. A comprehensive exhibit of contemporary costumes and dress fabrics as inspired by the Renaissance is also open to the public (until June 30) at the Metropolitan Museum of Art. Of singular importance in this latter exhibition is the participation of some 13 fabric manufacturers whose designers created special fabrics for this event.

In addition to limiting yardages and shuffling civilian fabrics for more practical use, problems of price and quality control are coming up to haunt business people in our 1942 war economy. Fashion items may be priced more or less blindly; that is, the actual costs of material and labor are not the only price determinants when exclusiveness, novelty and design talents enter in. Standards and specifications haven't figured too prominently in the past in the women's garment industry. Therefore, it will be up to the far-sighted fabric makers, cutters-up and distributors to promote better labeling, advertising and sales training in order to keep consumers informed on quality as the latter meet rising prices and curtailed services.

Even though the mobilization of the fashion and fabric industries has had to come slowly, it is too bad that the emergency of this particular spring has caught most representatives of our fashion press asleep at the switch. They have been gingerly flirting with the "we-always-do-it-this-way" attitude, all but overlooking the important task of interpreting the ration-rumblings that have been coming out of Washington. However, with the crystalization of certain "orders from headquarters" it isn't too late to harness the women's pages of our press into a fearless campaign to prepare the public for the changes that are written on the wall. "Consumer education"—particularly on conservation—is urgently needed right now.

Adaptations, substitutions and allocations are "in" for a while! They aren't squeeze plays; they are the opportunities by which every individual can stake a claim in victory. Democracy rides on the swinging pendulum of change . . . from "The Good Ole Days" to the new. America has always loved to move fast, so right now our task is to become adapted in a hurry to a world of diminishing supply and increasing military demand. Every American wants most of all to win the war . . . to save the free-flowing, business-like culture that we love from being devoured.

Fabrics For Military Purposes

Cotton and acetate rayon fabrics for sleeping-bags; banner silk substitute

FABRICS for use in making sleeping bags as covered in Quartermaster Corps Tentative Specification P. Q. D. No. 135, have been difficult to obtain in sufficient quantities. In order to obtain adequate yardage, invitation No. 669-42 Phila-Neg-102 requests bids on the original balloon cloth and on two alternate fabrics, one of which is made from continuous-filament acetate rayon.

For all three fabrics, the following requirements apply: Grade shall be first, weave shall be plain, color shall be an approved shade of olive drab obtained without use of sulphur dyes, fastness to weather for 10 days shall be good, fastness to dry-cleaning shall be good, and a suitable water-repellent finish with aluminimum salts and waxes shall be applied and shall meet the following requirements: an initial spray rating of 90, a spray rating of at least 80 after 10 days' exposure. Finished fabrics must be substantially free of sulphates and chlorides. In addition, fabrics must be so constructed as to retain feathers or down.

Detail requirements of the finished fabrics are as follows:

Balloon cloth shall have a maximum weight of 3.7 oz. per yd., and shall have a width of 34 to 42 in.

Threads per inch shall be 124x118, minimum.

Breaking strength, minimum by 1x1x3 grab method, shall be 70 lb. warp and 80 lb. filling.

[Although not stated in the specification, the following gray construction is approximately correct to produce the required fabric: 3.92 oz. per sq.yd., 40 in., 112x124=3.68 yd. per lb. 30s warp and 30 filling. To finish 36 in.]

Alternate cotton fabric shall have a maximum weight of 3½ oz. per sq.yd., and shall have a width of 32 to 37 in.

Threads per inch shall be not less than 95x95.

Breaking strength shall be 50 lb. warp and 50 lb. filling, minimum, when tested by 1x1x3 grab method.

[Although not stated in the specification, approximate gray construction to give required fabric is as follows: 3.74 oz. per sq.yd., 40 in., 86x100=3.87 yd. per lb. with 26s warp and 24s filling. To finish 36 in.]

Alternate acetate rayon fabric shall weigh 3½ oz. per sq.yd., plus or minus ½ oz. tolerance, and shall have a width of 34 to 36 in.

Counts shall be 124x70, minimum. Breaking strength shall be 50x40 lb. minimum, (1x1x3 grab method).

[Although not stated in specification, the following gray construction is approximately that required: 3.70 oz. sq.yd., 40 in., 112x78=3.90 yd. per lb. with 150-den. acetate warp and 300-den. acetate filling. To finish 36 in.]

BANNER SILK FABRICS used in the manufacture of colors and standards for the Army are scarce. Since silk stocks have been put under control, little information can be furnished as to the procurement of silk stocks. However, QM has been seeking a suitable substitute for some time. Army Specification No. 7-2A furnishes information that should be useful to those attempting to work out a substitute. The specification gives the following requirements for a banner silk fabric:

Material—Raw silk for warp or filling shall be 86 to 88% pure boiled-off vat-dyed Japan organzine, 13/15 denier. Note: A substitute of rayon probably can be worked out.

Texture—Warp not less than 400 ends per inch of 3 thread, and filling not less than 116 picks per inch, 3 ends, 3 threads, in the finished fabric, with twist of 16 and 14 turns.

Weave—2 up-2 down twill.

Color—Vat dyed in the yarn in colors specified in the invitation to bid. Colors specified shall match official colors as shown on the United States Color Card issued by the Textile Color Card Association of the United States.

Width—Shall be specified in the invitation for bids.

Weight—Shall be not less than 3.7 ounces per square yard.

Finish—The material shall be evenly woven and free from all clearly recognizable imperfections of manufacture.

Strength—(by grab method) 170 lbs. warp and 150 lbs. filling, minimum.

Incineration—The specification on banner silk requires that ash not exceed 1% of the original weighing, but it is expected that this provision will not hold with a rayon substitute.

Fastness—Colors shall be fast when subjected to following tests: (1) Boil 10 min. in solution of granular sodium carbonate, 10 grains to 1 pt. water. (2) Boil 10 min. in soap solution, 80 grains to 1 pt. water. (3) Wet out with water, steep 2 min. in 1 to 16 solution of potassium permanganate. Steep 10 min. in a 1 to 10 solution of sodium bisulphide. (4) Steep one hour in 3° Tw. chloride of lime solution. (5) Steep 10 min. in commercial muriatic acid 20°, rinse in cold water. (6) Weather (roof test) for 30 days, or equivalent by other means.

U. S. Army Signal Corps Photo

Sleeping bag for Alaskan climes keeps soldier warm at 40° below zero. It weighs less than 11 lb.

Weaving Duck on Carpet Looms

Methods of converting equipment shown at Alexander Smith & Sons Carpet Co.

COTTON DUCK manufacture on converted carpet looms was the principal subject of discussion at a forum arranged by the Institute of Carpet Manufacturers of America, and held April 22 at the Alexander Smith & Sons Carpet Co., Yonkers, N. Y. A tour of inspection of the plant revealed the many changes and adjustments that are necessary in a carpet mill if it is to convert successfully its equipment for the manufacture of numbered duck.

As the demand for duck now exceeds the productive limit of the regular duck looms, mills in many branches of the textile industry are attempting to convert their plants to producing those fabrics greatest in demand. Such conversion is being conducted in haste and in many plants that have not had experience in the production of such fabrics. The interchange of information on conversion of equipment is an example of cooperative effort that today is found throughout the textile industry. Following are the major technical points brought out at the forum.

WARPING—Most carpet mills do not possess cotton spinning units; consequently the cotton yarns used in the warp preparation process are generally purchased on tubes.

High-speed warping, wherever possible, should be used and automatic creels employed. The formation of loom beams of 12/4 looms presents a problem, as a creel of tremendous size would be required to provide the required number of ends on a beam. Generally, carpet mills can prepare section beams on high-speed warpers and then place these beams in the creel of a sizer, as is ordinarily done in preparing a carpet warp. Yarn from the section beams may be threaded through the sizer and the sizer operated without sizing and heated drying cylinders. The purpose of this operation is simply to assemble the yarn from the section beams in correct order on the loom beam.

Another method sometimes employed is to eliminate the quetsch and drying section of a sizer. Then, the yarns can be drawn from the section creel, through guide rods, and through a comb which regulates the width of the warp, after which they are wound on a loom beam.

Eyeboards, it is stated, should not be used, as difficulty is frequently encountered from yarns tangling at the eyeboards when yarn tension is uneven. Tangling of yarn results as it is necessary to draw three or four ends through

(*Continued on page* 80)

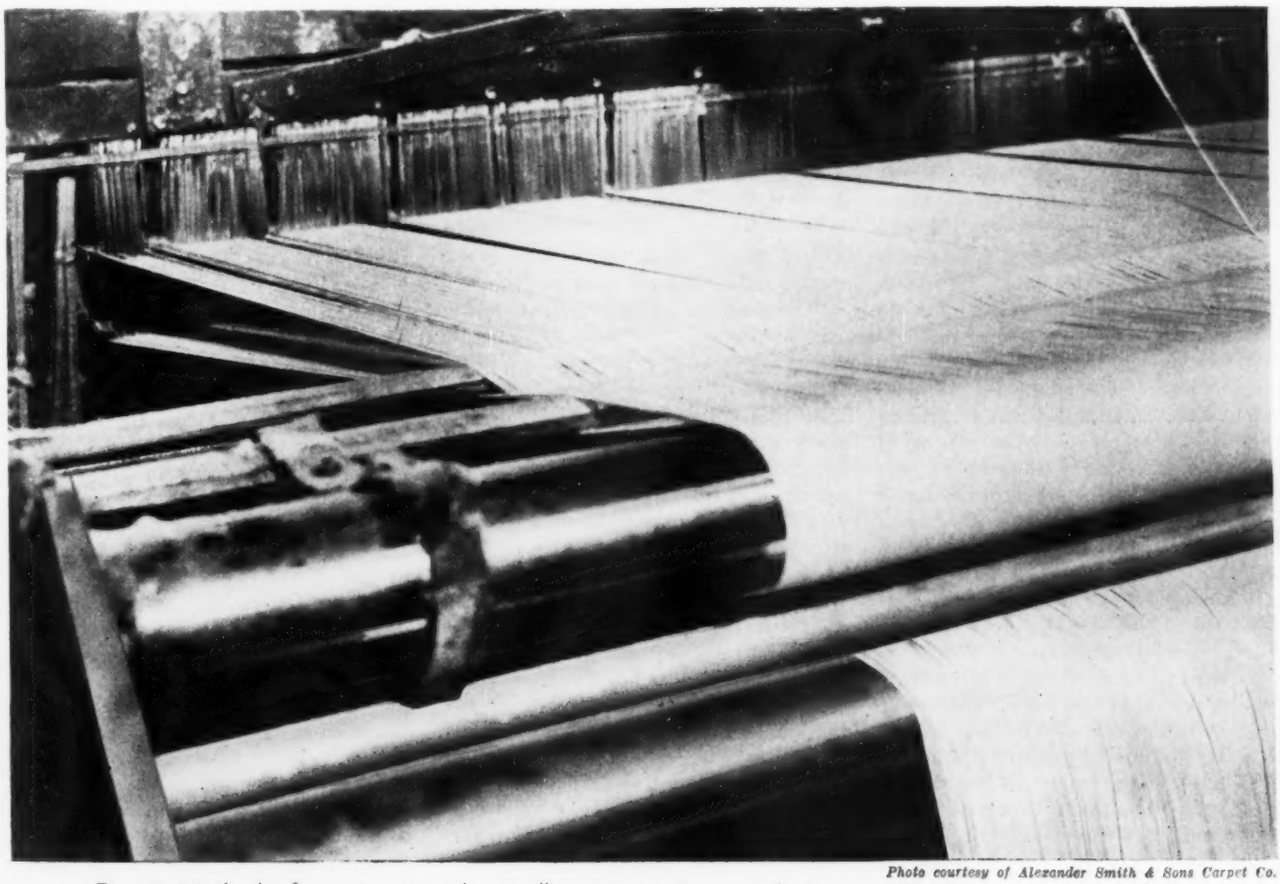


Photo courtesy of Alexander Smith & Sons Carpet Co.

Fig. 1. Method of constructing drag rolls in converting a velvet carpet loom for weaving duck.

"War and Textiles" Theme at A.C.M.A.

Dominates every phase of meeting at Atlanta—Herman Cone new president

THE LONG RANGE EFFECT of war on textiles was definitely the theme of the American Cotton Manufacturers Association meeting held May 1 and 2 in Atlanta, Ga. Uniforms were much in evidence and the military situation was constantly forging to the front.

John F. Chapman, foreign editor of *Business Week*, painted a vivid word-picture of the conditions in Europe and in the East. William P. Witherow, president of the National Association of Manufacturers, told in graphic manner what the industries of the nation had done and outlined their goal for the months to come. "Industrial conversion to an all-out effort is a modern miracle," he said. "Simple patriotism," he continued, "demands the same effort and loyalty from the business management as from the soldier."

HERMAN CONE, newly elected president of the American Cotton Manufacturers Association, is president of the Proximity Mfg. Co. and Revolution Cotton Mills, Greensboro, N. C., and chairman of the Cone Export & Commission Co. He is a past president of the Greensboro Chamber of Commerce, a Regional Boyscouts Director, head of the Community Chest and other civic activities in Greensboro, and a past president of the Cotton Manufacturers Association of North Carolina.

WM. N. BANKS, president of the association, surveyed the innumerable problems facing the cotton-textile industry as a result of the war. An idea of the scope of Mr. Banks' address will be gathered from the following abstracts:

"I have kept in close touch with the work the Cotton-Textile Institute and National Cotton Council have done since their promotion and research programs were coordinated, and have been delighted with the results obtained. They have done a magnificent job, and we have cause to be proud of the support our association has given this important work. The efforts we are making and the organization we are perfecting will be of incalculable aid to us after war orders are a thing of the past. It is the same principle as investing in an insurance policy that will protect us against difficult days that lie ahead.

"We favored the broad purposes of the Emergency Price Control Act of 1942, the object of which is to stabilize prices, prevent profiteering and inflation. We believe, however, very strongly that no ceiling prices would be effective unless a ceiling was also fixed on wages. The Act as finally passed on Jan. 30, 1942, gives no power to fix wages, and from our standpoint this nullifies a great deal of the good in this legislation. . . . .

"The bill before Congress to suspend the 40-hour work week should be passed. The 40-hour week was enacted in order to spread employment during the depression. The idea of inflicting a penalty of 50% for overtime was for the specific purpose of discouraging overtime and providing more jobs for the unemployed. Now that this situation has changed as a result of our war efforts, unemployment being reduced to small proportions, and the need of more workers being extremely urgent, Congress should repeal the 40-hour work week during the emergency, and make 48 hours the basic work week. This would aid production immeasurably, for the prices obtained for many articles will not permit industries to pay the punitive rates for overtime. In addition to this, the 48-hour basic week will tend to curb inflation and keep prices down. . . . .

"I am proud of the wonderful performance of the great textile industry. Although we have 11,000,000 less spindles than we had in World War I, we have been consuming over 900,000 bales per month as against 500,000 to 550,000 bales per month in World War I. In other words, with one-third less spindles, we have been consuming almost twice as much cotton. Our consumption this year should be close to 12,000,000 bales as against a normal consumption of six or seven million. No one dreamed the cotton mills could expand their production so enormously. This phenomenal accomplishment is due to efficient management, wise planning on the part of our operating executives, and the wholehearted cooperation of our employees. . . . .

"It is estimated about 50% of the production of cotton mills is now going into our All-Out for Victory effort. If more production is needed, I am sure I interpret correctly the spirit of this industry when I say we will produce to the very limit of our ability in order to supply whatever cotton materials are required to win this war and thus preserve democracy and our way of life. We pledge to our country and to our Government the fullest measure of cooperation. . . . .

"We will oppose with all the strength and might we can command any and all radical, insidious, and subversive influences that would impede and deter us from making the largest possible contribution to our country in this hour of supreme need."

ONE OF THE HIGH-LIGHTS of the convention was the Friday afternoon session devoted to Promotion and Research. President Banks pointed out that we are now using all the cotton produced in this country and that a continuation of the promotion and research activities of the Cotton-Textile Institute and the National Cotton Council would undoubtedly assure us larger markets in the future. Having accomplished so much with so little it is clearly in order that more, much more, be invested in joint effort with these agencies, he added.

Ed Lipscomb, advertising director of the National Cotton Council, directed this section of the program and introduced members of the institute and the council who in turn presented able

reports on their activities. Mr. Lipscomb gave a heartening report on the long-range program now under way to establish cotton as a leader among fabrics. Dr. M. K. Horne, Jr., of the council's research staff said that science will have its part in waging the war and writing the peace. He reported on the various promotional, fact-finding, and research activities engaged in by his group and mentioned several valuable developments that have resulted from their studies. "One of the most important jobs now in hand," he said, "is addressed to correcting the fundamental disadvantages of the cotton fiber, due to its molecular structure." Work is being carried on in hundreds of establishments—state universities, industrial laboratories, Government agencies—cooperating with the council. A balanced program of research, both scientific and economic is under way. While this department is less than a year old, it is evident from his report that valuable ground work has been laid.

John T. Wigington, director of research of the Cotton-Textile institute, developed further the subject of coordination of effort on the part of various agencies interested in the work of gathering data and conducting case studies. He mentioned the progress being made in studies of such problems as: Fabric resistance to wind; upholstery fabrics; effects of storage; fabric finishing. He called attention to reports already mailed to members on such matters as tests of irrigated and rain-grown upland cotton; spinning properties of cotton compressed to different bale densities; and the cutting of bales during compressing.

Miss Virginia Jewel, fashion director of the institute, appearing as the only member of the fairer sex on the program, made good the designation and spoke of the importance of style and fashion in the life of the nation. Cotton has a permanent place in the apparel industry, the third largest in America. "This branch of industry, representing eight billion dollars annual business, ranks next to food in volume," she said. Hard work and good publicity has brought cotton out of the cheaper grades and placed it definitely among the style fabrics. Hard work and good publicity will keep it there.

Charles K. Everett, director of merchandising for the institute, concluded this section of the program by presenting charts and figures to impress the possibilities of the current promotional campaign.

AT THE FINAL SESSION held Saturday morning Dr. C. T. Murchison reviewed and brought up to date the activities of the institute at the Nation's Capitol.

ACMA Officers: (left to right) W. M. McLaurine, secretary-treasurer; J. A. Chapman, 2nd vice-president; Herman Cone, president; Hugh M. Comer, 1st vice-president; W. N. Banks, retiring president.

He spoke of the general situation confronting labor, management and Government, and said that the problems of the industry were being handled as the logic of the situation demanded rather than as directed by any group or agency of industry, agriculture, or Government. He called attention to several changes that might occur in laws.

William D. Anderson, president of Bibb Mfg. Co., inspired his hearers with his alternately serious and humorous address in which he appealed to the true American to maintain his spiritual values, lest we lose the soul of the nation. "We must have the will to do, to sacrifice, and to suffer," he said.

Fuller E. Callaway, Jr., acting for the association, presented the retiring president with a beautiful silver bowl as a token of esteem. In retiring, Mr. Banks handed the gavel to the newly-elected president Herman Cone, president of Proximity Mfg. Co., Greensboro, N. C. Other officers elected at this session were: First vice-president, Hugh Comer, Sylacauga, Ala., and second vice-president, Jas. A. Chapman, Spartanburg, S. C. The following were elected as members of the Board of Goverment: Ernest Rees, Norman Elsas, Ellison S. McKissick, Charles A. Cannon, and S. M. Beattie.

WM. M. McLAURINE, secretary of the association, in his address at Atlanta, brought to a head the work on public relations that he has done since this important undertaking was put up to him at the last annual convention. After surveying the field and quoting from many authorities, Mr. McLaurine summarized the situation in the cotton textile industry as follows:

"I believe that our industry through our Board of Government has had for some time a feeling of social values, because at its pre-convention meeting last year, it asked me to formulate a program of Public Relations and actively endeavor to do some work in that field this year. Most of you are already informed about these plans and activities. As usual, any program gets three results—active cooperation, silent indifference and active criticism. I must state that of the three reactions to the program, silent indifference ranked first, active cooperation ranked second and criticism was least. To be fair in this statement, it was not really criticism but a failure on the part of one or two to comprehend the means employed to secure the objectives desired. I still feel that the program is sound and fundamental and must be used as a spring-board from which to jump into any other phase of Public Relations.

"A sane program of industrial relations is the safest and surest way to express a large part of the social attitude necessary and the quickest route to public opinion. There is no better agency in the South to build good public opinion for the textile industry than the cooperation of the 300,000 textile workers in the South together with their friends. They must initiate the sale of the organization to the public or, in my opinion, it cannot be sold. . . .

"Industry today needs to present to the public a real program for human improvement. This will eliminate much of the apparent discontent. Indifference and inertia relating to this subject must be replaced with interest and activity. Good human engineering is good business because it points the way of industrial survival. The plans require original and courageous thought. We must do some serious research work on this subject."

Dye Shortage Limited to Few Types

But substitutes for anthraquinone vat colors must be used on some textiles

ISSUANCE BY WPB of orders restricting the number and strength of patterns on printed fabrics and the use of anthraquinone vat dyes has caused some confusion as to the severity of the dye shortage and the effect of whatever shortage exists. It is important, therefor, for textile dyers and printers to familiarize themselves with the dye situation and then to pass on to their customers and the general public such information as is pertinent from the consumer viewpoint.

Over a year ago it became evident that production of certain vat dyes could not keep pace with the rapidly increasing demands for vat-dyed materials for military use plus the growing call for civilian goods dyed or printed with fast colors. Later it became evident that production of those vat dyes employed in dyeing olive drab shades was insufficient to fill all the requirements of the Government. Fortunately, those officers in the Quartermaster Corps who are responsible for procurement of textiles recognized this fact and modified certain specifications so as to permit use of dyes other than vat colors on some types of textiles where vats are not essential.

In February of this year print cloth manufacturers, printers, and converters were advised by WPB that a reduction in the number of patterns and strength of pattern colors would be required. According to this regulation, the number of patterns for print colors must be cut in half; designs must be made with not over 50% peg coverage when used on white grounds or commercial tint ground; blotch patterns must have a peg coverage of not over 40%; and blotches must not be deeper than Class 2 on vat or pigment dyes or Class 3 on all other dyes.

Next WPB issued a conservation order restricting the sale and use of anthraquinone vat dyes. This order states that during the period April 1 to Dec. 31, 1942, no person shall deliver, accept delivery, or use any of the following vat dyes other than for specified Government purposes: Brown R, (CI, 1151); Brown G, (CI,1152); Olive R, (CI,1150); Golden Orange G, (CI, 1096); Golden Orange A, (CI,1097); Khaki 2G; Olive T; Olive Col; Olive Green B; Yellow 3RD. During the period April 1 to June 30, 1942, no persons shall deliver, accept delivery, or use an amount of anthraquinone vat dyes other than those listed above in excess of 12½% of the amount delivered or used during 1941. The order called also for return of dyes mentioned above in excess of the amount scheduled to be used prior to April 30, 1942.

FURTHER RESTRICTIONS on use of dyes on textiles for civilian purposes are quite possible that in the future, although there are no indications of these at present. Nevertheless, one danger which dyers and printers should guard against is any tendency which may become apparent toward making such further restrictions more stringent than necessary. A more immediate problem is that of making the best use of those dyes on which there are no restrictions. This calls for conservation of dyes by eliminating all unnecessary waste and for careful selection of dyes according to the ultimate use of the textiles to which the dyes are to be applied.

Aside from the economies which the dyer or printer can effect of his own volition, there are other savings which can be made through cooperation of the mills and the converters or other customers. For example, elimination of redyeing to correct dyeings which are slightly off-shade, reduction in depth of shades in some instances, and increase in length of runs will all help.

There are, of course, numerous vat dyes other than those derived from anthraquinone on which there are no restrictions. On the other hand, several dyes other than vat dyes are produced from anthraquinone, and there are shortages of certain of these, such as some acetate rayon dyes. Most troublesome, however, is the scarcity of the anthraquinone vat dyes; and to eke out the supply of those still available for use on textiles for civilian purposes, other dyes must be employed on some materials which formerly were dyed with the anthraquinone vat colors.

PREREQUISITES to the intelligent substitution of other classes of dyes for anthraquinone vat colors are a knowledge of the fastness requirements of the textiles and of the fastness properties of the dyes. Having this information, the dyer or printer can determine whether vat dyes of the indigoid or sulphide type, sulphur dyes, fast-to-light direct dyes, or other classes of dyes are most suitable. It is important, too, for textile men to be constantly on the alert for new developments in dyeing and printing. For instance, the new pigment-dyeing method described on page 90 of this issue provides a means of producing a limited range of shades of superior fastness on cotton and spun rayons and has the further advantage of increasing the resistance to abrasion of the fabrics. Among other recent developments which merit attention are included chemicals for aftertreating dyed or printed materials to increase their fastness properties.

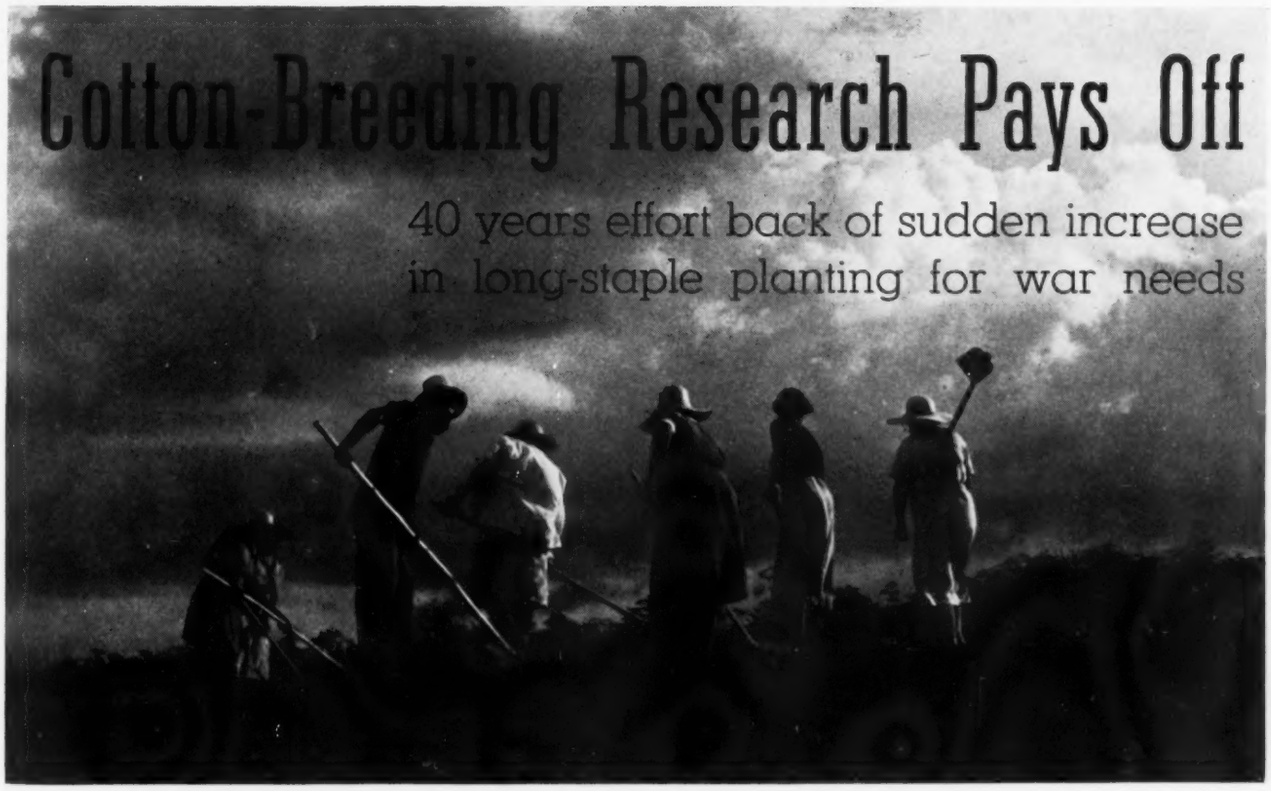
Closely linked with the shortage of vat dyes, and the restrictions on their sale and use, is the reduction in the amount of textiles available for civilian purposes. As it becomes apparent to consumers that they will have to get along with fewer suits, dresses, and other textile products, and that the materials which can be purchased will have to be made to serve as long as possible, greater stress will be placed on durability.

For the reasons stated, the fastness of dyes to light, washing, and other destructive agencies, rather than their brilliance or other properties, will be the primary factor governing their selection. Likewise, factual labeling of dyed or printed fabrics will assume greater importance. Such factual labels should give the consumer full, understandable information regarding the fastness properties of the materials plus recommendations for their proper care, including laundering, drycleaning, etc.

Unless the shortage of dyes becomes much more acute than is anticipated, neither the textile industry nor consumers should suffer any undue hardships, provided dyes are carefully selected for specific applications and consumers are educated in the proper care of garments and other products made from dyed or printed textiles.

Cotton-Breeding Research Pays Off

40 years effort back of sudden increase in long-staple planting for war needs



The Last Row

By MILDRED G. BARNWELL
Executive Secretary, Southern Combed Yarn Spinners Association

This story is good news to cotton manufacturers. It tells of the profits which 40 years of research in cotton breeding are now paying; profits in the form of a better manufactured product and a better war job.

The story is a first-hand job too. The author was born in the Delta, and has kept in constant touch with seed-breeding in that section. The photographs, including the front-cover picture, were taken by Miss Bessie Walker Callaway, of La Grange, Ga., during a trip through the Delta.

IT'S COTTON CHOPPIN' TIME in the Delta. Throughout that lush section of the Cotton Belt lusty negroes, each with hoe in hand, are thinning out the thickly growing stands, leaving single sturdy plants evenly spaced—12 to 18 inches apart—down the long straight rows. This year there's a new determination to their stroke as they chop—and step, chop—and step, and chop in steady rhythmic motion. This year they step faster, chop more vigorously. This year they're raising war cotton and Bossman says it's got to be more and better.

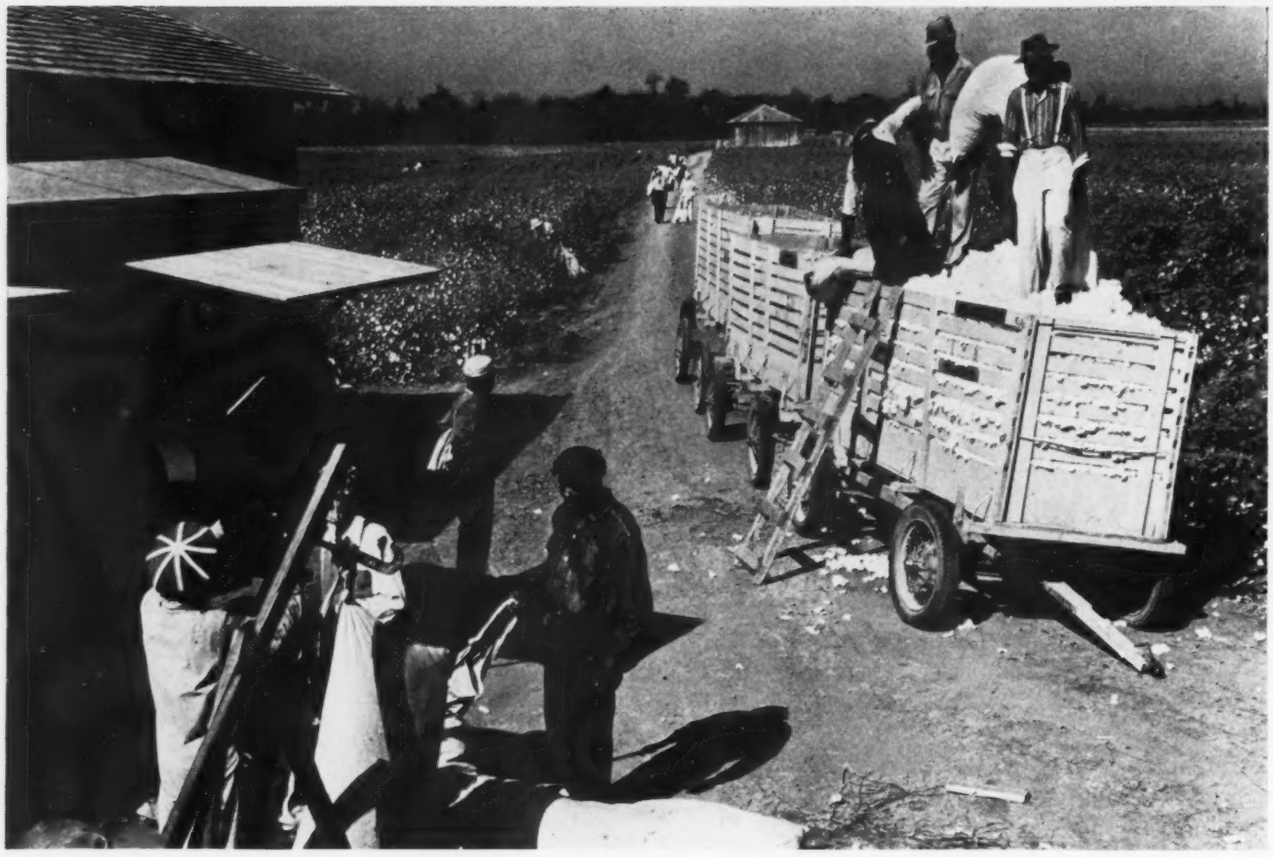
The Delta has geared its cotton planting program to war needs. Over their morning Coca-Colas planters confide they've gone in heavily on Coker 100, or Delfos, or Stoneville 2B, or Wilds, seed varieties which will give them a harvest of long staples of quality and character such as can be grown nowhere else except in the Delta. Mentally they tot up their crop not in dollars earned but in bales for Uncle Sam. For the Delta with its million acres of rich alluvial cotton land is planting 80% of its crop in staples 1⅛ in. and over—those most needed for the war effort.

That the Delta can shift over-season from a 49% planting of short staple cotton to an 80% acreage in long staples is no accident. The Delta climate and the composition of the land which makes the growing of long staples possible are the gifts of God, but back of the seed which guarantees the long staple stock is the thrilling story of four decades of seed-breeding effort, coordinated between private enterprise and a Government-financed experiment station. Delta cotton is the result of nearly 40 years of scientific research by some of the world's leading agronomists; the result of vast outlay of Federal, State, and private funds; the result of patient effort and painstaking care of the directors of plant breeding programs in continuous effort to perfect seed which will give the farmer a good yield and a high quality cotton. The kind of seed a man plants governs to a great extent the size and money value of his crop.

Cotton seed breeding is not a new effort, although commercial breeding was first inaugurated in 1902. The first seed of good ginning characteristics were smuggled into Mississippi from Mexico in 1806, and from then until 1870 a foundation period of breeding was under way, during which time varieties were selected by at least five agronomists of that day; such men as Vick, Griffin, Nutt, Boyd, Parker, selected seed which produced staples above the average length. National interest in the problem was aroused by the passage in 1887 of the Hatch Act, a Federal statute, which appropriated $15,000 annually for State experiment stations. The passage by Congress of the Adams Act in 1906, the Purnell Act in 1925, and the Jones-Bankhead Act of 1935, built up the total annual endowment to $180,000 allotted for experimental station work for States throughout the agricultural South. In the meantime private breeders were also active in developing important cottons, offering their seed for sale.

TODAY WE FIND cotton seed breeding divided into three distinctive groups:

1. The Federal and State supported experiment stations, of which the Delta



Weighing In

Experimental Station is a leading example. Results of the work done at these stations are for the public, and any cotton farmer interested is entitled to information and help needed to make his crop a paying one.

2. Commercial breeders who supply pedigreed seed, selected, fumigated, and scientifically packed, to cotton planters throughout the entire cotton belt as well as to foreign cotton growing countries. Three leading companies in this bracket are: Delta & Pine Land Co., Stoneville Pedigreed Seed Co., and Coker Pedigreed Seed Co. Their respective breed experts—Ewing, Walker and Tate, and Wilds—are considered the greatest of them all.

3. So-called multipliers, or cotton planters who buy pedigreed seed from a certified breeder, and sell, under certificate of the State Seed Improvement Association, selected seed from their own planting, each bag of seed tagged to show its lineage. A purple tag marks the breeder's seed; a blue tag marks the multiplier's first-year seed-crop; a red tag identifies the seed as two years from the breeder; and third-year seed is tagged with a white marker. No certified seed is sold more than three years from original breeder. An excellent example of this class is Wildwood Plantation, near Greenwood, which fills an important place as multiplier for Coker 100.

Through this series of seed distributors Delta cotton seed is kept pure from the taint of undesirable cross-pollination, and from the old-time curse of character and quality disintegration after a few years of the same planting. It is no extravagant gesture for Delta cotton planters to harvest their cotton crop, sell their seed at oil mill prices to the crushers (last fall it was about $50 to $60 a ton), and the following spring buy from certified breeders, or multipliers, their planting seed at prices ranging anywhere from $60 to $170 over the crushers' market. By investing in the best planting seed, they maintain the quality standards of Delta cotton: quality for which cotton manufacturers are willing to pay, and which they are guaranteed since each Delta bale is plainly identified as such. This is the quality on which the Government's textile procurement program is built.

Each of the three groups engaged in seed work has its own engrossing story—and the story of each dovetails into that of the other, and no one story is complete without the others. The work of these groups is the foundation upon which the Delta's cotton economy is built. For although novelists and romanticists play upon the Delta land barons who, they say, dress in white linen and sip mint juleps on their colonnaded porches while looking over their lush and expansive acres, any one of those gentlemen will tell you that raising cotton is based upon the science of seed breeding, plus blood and toil, tears and sweat.

In the order of their grouping here are the stories behind the story of the Delta's war planting program, and why that program is possible:

THE DELTA EXPERIMENT STATION was established in 1904, utilizing the above mentioned Federal resources under the direction of a series of brilliant agronomists—J. W. Fox, E. C. Ewing, H. B. Brown, G. B. Walker, W. E. Ayres, and its recent director, the late Homer C. McNamara—and is recognized today as the outstanding unit if its kind. Some of the finest cottons of today have been developed there, among them the Delfos and the Missdel; strains which were bred from the Express and Foster varieties, found unsuitable for Texas planting, but ideal for the Delta.

Located in the heart of the four million acres of the Delta, the station is less than two hours' drive from any plantation in the region and tens of thousands of callers go there each year to take advantage of the agricultural experiment work being done there. Cotton planters have found the information particularly valuable in adjusting their production goal to the AAA regulations on acreage—so much so that today the Delta planter has practically doubled the average lint yield per acre, compared to the average in

1929-32. In other words, on AAA restricted acreage he is still producing the same baleage, but of better quality, than he produced when every fence corner was planted to cotton, and feedstuffs had to be shipped in for livestock and human subsistence!

One cannot help but feel a thrill at the sight of the Delta Experiment Station, which physically, is a pretty important-looking place: 3,400 acres, of which 800 acres are laid out in about 30,000 experimental plots, and 256 acres are devoted entirely to cotton experimentation; two three-story 50-room fireproof office buildings; two large fireproof laboratories and storage buildings with 75,000 to 100,000 sq. ft. of ginning and storing space for cotton; a barn and granary; 25 residences for staff members and their families; two-story dormitory in which about 15 of the scientists live; dwellings for the nearly 50 laborers and their families.

Homer McNamara, who was managing director of the station until his recent death, was proud of the place, and glad to tell of its work. He had for his over-all goal to give the cotton farmer the most dollar-value per acre; a cotton crop which can be grown and harvested economically and which will have a high lint yield of good grade, for which mills will pay. Specifically his two most important projects were breeding: (1) A type of cotton which will be suitable for mechanical harvesting, a breed which, under the mauling of the mechanical picker, will still maintain a good grade with less trash content and leaf stain; this would decrease cost of production $8 to $10 per bale in picking costs. (2) A type of cotton which will take lots of weather punishment and still produce a good middling bale.

He introduced us to J. W. Neely, the geneticist at the Delta Experiment Station, who maintains a collection of cottons from all over the world, representing about 2,400 varieties and strains: wild cotton, non-commercial, aboriginal, and every important commercial breed. Why? To see what important characteristics can be transmitted to commercial varieties. Neely has plots of cotton which bear green, buff, yellow, and strawberry blonde lint. The colors are not permanent, but are useful in determining inheritance of characters.

At the Delta Experiment Station no department is busier or more important than the Entomology Division under E. W. Dunnam. It is impossible to estimate the vast amount of money lost through boll-weevil damage since that pest first crossed the Mississippi River near Natchez about 1910. For years breeders have tried to develop quick-maturing cottons which were weevil-resistant, while planters have poisoned by hand, by mule-rigged spraying machines, by airplane dusting. As the weevil infestation was conquered, a new pest became more threatening. It was the aphis, recognized now as dangerous an enemy as the boll-weevil. It was discovered that in trying to fight the boll-weevil, the cell sap of the cotton plant had been so changed that it now attracted the aphis. Today work is under way at the Delta Experiment Station in development of cotton resistant to both pests.

Just recently the Agricultural Marketing Service set up a service testing laboratory at the Delta Station for cotton breeders throughout the United States so that their selections and strains may be analyzed and tested at nominal cost. This was made possible by Federal Legislation passed in April 1941. Among available analyses is the fiber strength test, a service of particular significance in determining types of cotton desired for war needs where strength is paramount.

The Delta Experiment Station is doing the broad work in seed breeding. Its laboratory facilities and the cooperation of its staff have been useful to commercial breeders as well as to plain dirt farmers. Results of accomplishments of the Delta Experiment Station belong to the public; benefit of any research work is theirs for the asking. "It is significant," said Homer McNamara, "that two of the three leading commercial breeders were one-time directors of this station. The parent stock of their present commercial breeds was developed here. Why don't you go by to see Ewing? He's at Scott, you know, and Walker's just over the bayou there."

AND SO WE DID. Leaving the Delta Experiment Station we drove a few miles north to Scott, to the famous Delta & Pine Land Co.—the largest cotton plantation in the world—spread along the bends of the Mississippi.

"We sho' on Mr. Oscar Johnston's place now," said Greely, our family nigger and chauffeur, who knew instantly when we crossed the unmarked property line. "Every house is painted white, and all my life I hears every cabin and every barn at Delta Pine is a white one. They tells me up here they don't use one-mule plows at all, but the niggers jus' rar' back on eight-row cultivators. It sho' is a fine plantation."

It sure is. Oscar Johnston is president of the company but actual farming operations are directed by J. W. Fox. There are 50,000 acres in the Delta & Pine Land Co. plantation of which 13,200 acres are in cotton. Between 17,000 and 18,000 bales was last year's harvest. Delta & Pine Land Co. for many years has sold its crop to three customers: one takes all the strict middling, one takes the middling, and one takes the strict low middling. The staple length runs from 1 3/32 to 1 1/8 in., but predominantly it is 1 3/32 in. It is smooth and even running in the mill, and has a good breaking strength.

Seed breeding on this place has been under the direction of E. C. Ewing since 1915. Taking some parent stock which he had developed at the Delta Station, Ewing undertook to develop a seed most suitable for the plantation itself. The result was Deltapine, a variety which was quick-maturing, easily ginned, and which gave a very high per acre lint yield. According to tables published in Mississippi Farm Research, Deltapine yielded 1019 lb. of lint per acre out of 14 varieties averaging (in 1941) 839 lb. per acre, increasing production per acre by nearly 25%! The staple length was smooth and desirable for spinning. It became popular throughout the Delta, and in 1940 at least 46% of the Delta acreage was planted in Deltapine, compared with 20% four years previous. It is used in manufacturing certain woven print goods, for knitted mercerized underwear and men's socks, and is particularly desirable for tire cord.

Every seed for sale by the Delta & Pine Land Co. is grown on their own property. Seed for sale is cleaned, graded, de-linted, and treated with ceresan disinfectant, which protects seedlings. Approximately 4,000 to 5,000 tons of seed are selected annually as suitable for planting, and sold throughout the Cotton Belt, and exported to foreign countries. This year Deltapine seed sold for $130 a ton compared with $50 oil-mill price for seed for crushing purposes. Incidentally it takes approximately one ton of seed to plant 50 acres in the Delta.

"We keep at least 50 acres in experimental plots, and we have several hundred seed varieties on tap all the time," said Mr. Ewing, "but we are specializing on Deltapine 12, a short staple but high quality cotton. It has taken a long time for us to get this seed where we wanted it. You know it takes ten years from the time we make a cross until the seed can be put on the market." In any comparative figures on breaking strength, etc., for similar staple lengths, Deltapine ranks high, we learned from scientific charts.

"But where is your laboratory, Mr. Ewing, where you do your testing?" we asked.

"We don't have one. We don't need

one. We send our cotton to the Delta Station. **They test it for us."**

Although the Delta itself will plant less of the Deltapine seed during war times, the breeding work done on the Delta & Pine Land Co. plantations retains its importance. Seed from this place is popular and widely grown throughout the South, and the use of staples from that seed will remain unabated. Deltapine cotton will go to the front in the heavy ducks for tents and tarpaulins—as well as in some of the uniform fabrics.

NEAR NEIGHBOR to Delta & Pine Land Co. and adjoining the Delta Experimental Station is the Stoneville Pedigreed Seed Co. Enjoying equal recognition with Ewing and Wilds in the cotton breeding field is G. B. Walker, who with H. B. Brown established this company in 1921, using as parent stock varieties developed at the Delta Station. Associated as breeder with Walker today is C. A. Tate. Stoneville specializes in seed of staple length longer than the high yielding Deltapine—most famous of their variety being Delfos 531, a fine cotton ranging in staple length $1\frac{5}{32}$ to $1\frac{3}{16}$ in. In 1941 approximately 43% of the Delta acreage was planted in this length staple. Our Army's summer uniforms are the snappy looking khaki outfits, shirt and slacks, of this staple cotton. Last year QM bought 99 million yards of this fabric, and even more will be bought this year. The bottleneck in this particular staple length lay behind the recent announcement by the Department of Agriculture of re-vamped differentials in the loan value of cotton, which put all staples $1\frac{1}{8}$ in. and over on an equitable per acre earning basis.

This year, for Delta's war cotton, longer staples such as those for which Stoneville Pedigreed Seed Co. is so well known, dominate the Delta planting. Here at Stoneville, the seed is the primary crop, the lint secondary; 1,500 acres are in cotton at Stoneville proper, and seed cotton is grown by other planters under contract with Walker, who retains control of the seed. After he has selected and graded and treated the seed, it is sold as breeder's registered seed at $140 per ton. Approximately 3,000 to 4,000 tons per year are Stoneville's commercial seed output, but this includes other varieties than the Delfos, notable among them being Stoneville 2B.

IT WAS GETTING LATE—we had to hurry—60 miles to go. "This is Heathman, where Mr. Dusty Miller used to all time 'rest you for speeding," reminded Greely as we headed east and passed the whistle stop station. Near Heathman is the Robertshaw Plantation and there goes on the work of John Oakley, newest hopeful in the field of commercial breeders. D. Howard Doane some years ago sensed the possibilities in breeding for fiber quality and in 1936 employed Oakley to undertake a program of selecting a superior fiber strain from fields of four standard varieties developed by other Delta breeders. This cotton, selected from Stoneville 5B, Delfos, Deltapine, and Express varieties, he calls Bobshaw, and it was carried last year for the first time in the Delta Experiment Station Standard Variety tests. It must be included for three years before it can be given a diploma and graduated as a standard variety. When Bobshaw "comes of age" —so to speak—when it is registered as a standard variety by the Agronomy Section of the Southern Agricultural Workers Association, another step forward in seed breeding is chalked up.

THIS IS THE PICTURE of seed breeding in the Delta proper, but those Delta planters who go in for planting the longest staples of all must go out of the State for their seed. They must go to Coker's Pedigreed Seed Co. in Hartsville, S. C. Oldest commercial breeder of them all is Coker's Pedigreed Seed, which started operations in 1902 under the direction of the late David R. Coker, who had been interested in the experiments carried out on his father's farm. The story is that each fall he picked his plant selections, preserved them in the proverbial paper bags, and took them in a trunk to Washington where they were ginned at the Department of Agriculture, as they alone had proper facilities for ginning individual selection.

Today Coker's seed commands the premium price of $220 a ton, for George J. Wilds, president of the company, has developed, among other popular strains, the only American upland cotton with a staple length $1\frac{1}{4}$ to $1\frac{1}{2}$ in. From this cotton some of the most important of the wartime yarns and fabrics are manufactured. Where length of fiber, and super-strength are required, there is a demand for Wild's "quarters". Barrage-balloon cloth requires this cotton. From it are made vast quantities of yarns for wire covering required to insulate the wiring of destroyers and battleships, for a ship's wiring is its nervous system. Millions of yards of extra-strong cotton cord substitute for linen in parachute shroud lines. On the strength of the fine yarns made from Wilds' cotton will depend the lives of our boys of the Army, the Navy, and the Air Corps.

The really great commercial breeders are well-established in the minds of planters and cotton manufacturers for their achievement in seed breeding work. The names of Ewing, Walker and Wilds are recognized by the American Society of Agronomists as outstanding scientists in their field of effort.

Planters know when they buy certified seed from any of these that under normal weather and pest conditions their crop will be satisfactory. Cotton manufacturers have become accustomed to specifying in their raw cotton contracts certain varieties of cotton developed by these breeders which are indicative of certain qualities and staple lengths, suitable for certain customers' needs. The War Department knows when it specifies certain lengths that the breeders have also given them strength and character.

The record of improved staple length of the entire crop of American cotton over the last decade shows the result of breeding toward that end. Figured in terms of premiums and discounts for staples prevailing in 1935 the result was an increased value for that year's crop of $8,000,000! But improved staple length is not enough. There is every indication that an inverse correlation exists not only between yield and length of staple but also between yield and strength and fineness. In an effort to arrive at the right answer—cotton with a high break for the spinners, and a high yield for the farmer—seed breeders have a problem which when solved will bring about revolutionary results in cotton growing and manufacturing. The solution of this problem is the aim of every breeder of note, and each has done work along this line.

But no matter what the breeding problem, or whether the work is being done on a Government experiment station, or by a great commercial breeder, or by a lone farmer experimenting in his own backyard, the method is fundamentally the same: selecting the best plants judged by characteristics desired, saving the seed locks by tying them up in paper bags; replanting selected seed; and following the same circle of selection year after year. This has been the story of cotton breeding over the last 125 years and it is estimated that at least 10,000,000 of these paper candy bags have been used for this purpose. "We use between 300,000 and 400,000 of them each year at the Delta Experiment Station," said Homer McNamara.

Yes sir, its cotton choppin' time. And the Delta has converted the results of peace-time research into a concentrated war effort: more and better long staples from certified, pedigreed seed, for its war-crop!

Face New Materials, New Methods

Wool association hears of new combing oil, new test methods, new blend rules

SUBSTITUTION was in the forefront at the annual meeting of the National Association of Wool Manufacturers held in New York on April 8. Among the more important substitutions which the war situation brings to this industry and which were discussed at the meeting, were (1) development of a substitute wool oil for combing and (2) manner and extent of handling substitute fibers in blends with wool.

On the first matter, H. N. Flanders, Jr., of Barre Wool Combing Co. reported for the Olive Oil Substitute Committee, of which Hugh Christison, of Arlington Mills, is chairman. Mr. Flanders explained that the need for a standardized combing oil lay primarily in the fact that wool tops may be combed in one place, spun in a dozen other mills, and woven and finished in still many others, and that if different types of oil were in use a great difficulty and confusion, particularly in the finishing of the cloth, would be encountered. With the shortage of olive oil starting as early as 1936 with the Spanish civil war, the committee came into being and has previously made several reports and recommendations. The substitute first set upon was a blend of heavy-process solvent, refined mineral oil, and coconut oil.

With the spread of the war to the Pacific, and the tightening of the coconut oil supply, the committee, according to Mr. Flanders, tried out an all-mineral-oil substitute, glyceride sulphonates, and a long list of natural glycerides. The best among all of these appeared to be a combination of mineral oil and lard oil, which was recommended under the date of Feb. 24, 1942. (See details on page 100 of this issue.) The WPB order M-60 limits the amount of coconut oil which may be put into use, and so hastens the adoption of the newly recommended substitute. Mr. Flanders expressed the belief that it will probably never be necessary to go back to olive oil and that other good substitutes may be adopted if it later becomes difficult to get lard oil. He also said that it would probably be more helpful for the committee to set up performance tests in future.

On the matter of wool substitutes, the association unanimously passed a resolution urging the WPB to reject plans for mandatory blending of fibers on the grounds that the natural interests of all producers will lead them to make the best use of raw materials at hand to produce the maximum yardage of goods acceptable to their trade. Action on this matter was precipitated by the fact that a wool conservation order had been issued prohibiting the manufacturers of wool blankets for civilian use unless they contain at least 20% of fibers other than wool, and further inferences were drawn from a current questionnaire that an order was in the making setting up mandatory blends for specified types of apparel fabrics and other wool products. The manufacturers agreed that each mill was under great pressure to make the best possible utilization of its quota of wool, and that each mill would naturally supply its civilian trade with the greatest possible yardage of the most suitable fabrics.

KENNETH W. MARRINER, Wool Section, WPB, who addressed NAWM meeting.

A. G. Ashcroft, of Alexander Smith & Sons Carpet Co., also of the Wool Committee of D-13 of the A.S.T.M., spoke before the meeting on standards for grading of wool. He referred to the new method for testing shrinkage of grease wool by extraction of samples by boring into a bale, and the extension of this technique to the determination of wool grade by means of microscopic measurement. He pointed out that Section I of D-13 had voted to present to the Department of Agriculture the following resolution:

"First, that the grade of a lot of wool should be that grade as determined on its card sliver produced from a representative sample of the wool in the scoured condition. Second, for woolen purposes, the card sliver should be the means for determining grade. Third, for worsted purposes, the top should be the means for determining grade. Fourth, the specifications for grade of both card sliver and top shall be those already adopted for the top."

He emphasized that the use of these standards would bring two changes into the picture: (a) microscopic measurements of standard methods; and (b) a change in the specifications for top coarser than 50s.

Kenneth W. Marriner, chief of the Wool Fabrics Section, WPB, in speaking before the annual NAWM luncheon, said that the wool industry was one of the few to keep its war production ahead of schedule, and that it was now using 70% of the worsted machinery and 55% of the woolen machinery on war work. He explained that those mills not set up to make war fabrics efficiently were the most affected by current wool restrictions. Mr. Marriner added that he did not doubt that the industry would get behind the program of producing goods just as fast as the Government wanted them.

Officers were re-elected as follows: Arthur Besse, president, Walter Humphrys, secretary-treasurer, and the following as vice presidents: Franklin W. Hobbs, Moses Pendleton, Lewis A. Hird, John L. Hutcheson, Jr., and Norman MacColl.

The executive committee reported that: "Combined total of Government orders for 1940 is approximately 30,000,000 yd., for 1941 93,500,000 yd., and for 1942 202,000,000 yd. This truly stupendous yardage to be delivered in 1942 represents approximately 750,000 yd. of fabric for every working day of the year. . . . It is gratifying to note that the net gain in membership of the association since a year ago is 21, represented mostly by manufacturing rather than by associate members."

Advice to Full-Fashioned Knitters

Authority gives information on substitute yarn problems and adapting machines

By MAX C. MILLER, M. E.
Knitting Engineer, Manville, R. I.

KINKS OF YARN as the needles come out of the press, should be maintained without causing the kinks to be overtaut so that those formed in the yarn by the sinkers, dividers, and needles during the Coulier and divide are not lost or disturbed. Longer kinks of yarn, such as are used in looser knitting cannot, of course, be held taut during this part of the motion, as the needle motion at this time is the same regardless of whether loose or tight knitting is being produced. Correct tautness can be maintained only during the knitting of the tightest portion of the fabric. Therefore, it is at this portion of the stocking where machine adjustments for tension should be made.

The next portion of the cycle, while still forming the tightest stitch the machine is intended to produce at any time, is when the yarn kinks are falling off the noses of the sinkers and dividers. It is at this point that the objectionable variation in loop and wale appearance can result. Ideal operation is obtained when the needle and catch-bar motions are timed so that the kinks of yarn come off the end of the sinker and divider noses without any possibility of delay, and without increasing the time that the yarn kinks are unsupported. However, looking at this point in the knitting cycle while turning the machine by hand does not give a true picture of what occurs at high-speed.

Allowances for adjustments of high-speed action cannot be accurately made because in some machines the needle bar or other parts whip. As a result, the needles pull the yarn off the sinker noses sooner than in other machines where high-speed operation may introduce a slight delay in movement of these parts. Only experimental adjustments and examination of the fabric can be relied upon as a true indication of the accuracy of adjustments. In machines in which the sinker slots are considerably worn, it is impossible to get an ideal action at this point. All that can be done under such conditions is to check adjustments with the sinkers and divider noses pushed upward to their highest position, as this is where they will try to go during high-speed power rotation because the sinker slots are worn deeper than the dividers. This is one reason why two-wale fabric effect so often results from worn machines.

Obviously, any yarn kink that is delayed from coming off the nose of its sinker or divider will cause yarn to be robbed from the adjacent kink, with the result that an undersirable variation in loop and wale width in the fabric is likely to result. Too early a falling off of the yarn from the sinker and divider noses, however, may produce over-all hit-or-miss variations in

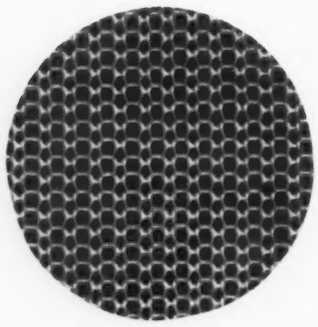


Fig. 4. Kink formation of Nylon full-fashioned fabric.

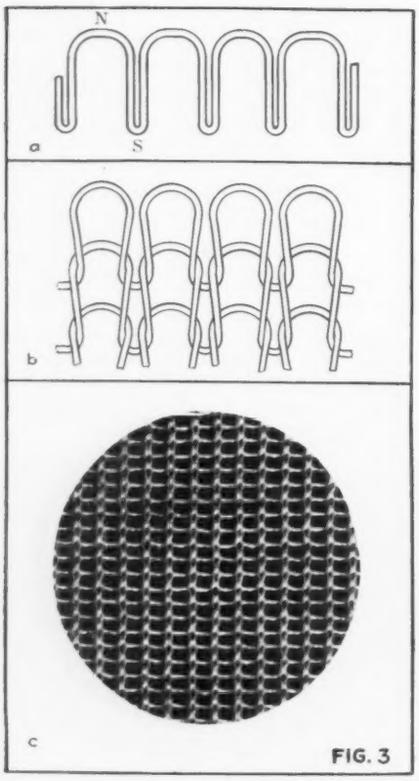


Fig. 3. Appearance of kink, or loop, formation of knitted silk full-fashioned fabric.

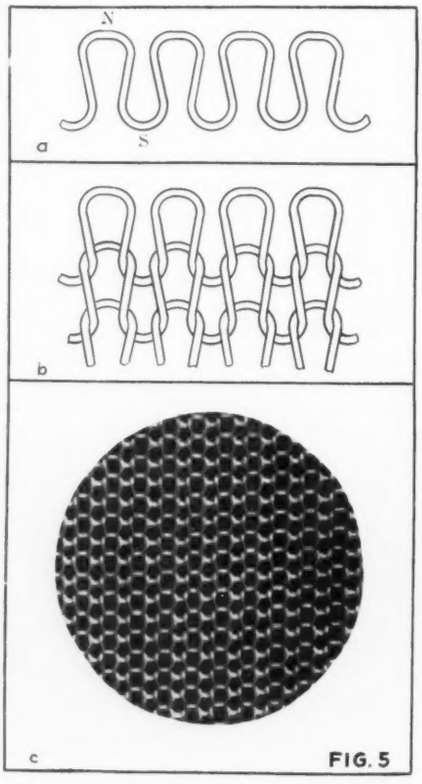


Fig. 5. Formation of kinks in full-fashioned fabric of cuprammonium rayon.

This is the second of a short series of articles analyzing the possibilities of substitute yarns for full-fashioned hosiery knitting and discussing technical problems encountered in forming kinks, or loops, to produce an attractive fabric. Mr. Miller is an authority who needs no introduction. He is a knitting machinery inventor and expert, and is author of the standard books "Principles of Knitting," and "Knitting Full-Fashioned Hosiery," both of which appeared serially in TEXTILE WORLD.

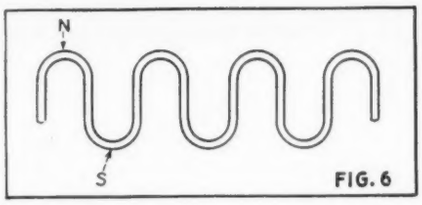


Fig. 6. Mercerized cotton yarn kinks.

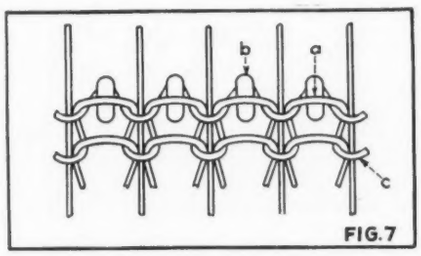


Fig. 7. Full-fashioned fabric diagramatically illustrated at the needle rise.

the evenness of the fabric wales. This undersirable effect will also result if the needle hooks are not pliered so that their shanks, at the sinker kinking level, are in line from the press edge, considered planwise and lengthwise of the needle series. Any appreciable play (more than 0.005 in.) of the sinker or divider butts in the catch-bar is objectionable.

The next important point in the process of knitting even-appearing rayon fabric is to see to it that the kinks of yarn, for each new course, are re-formed evenly by the knockover bits after the yarn falls off the end of the sinker and divider noses. In machines with nibbed knockover bits the actual re-kinking of the new course is accomplished at the back curve of the knockover bits by their motion backward prior to rising, and not by the downward movement of the needles as with plain knockover bits. During the divide the yarn kinks for the new course should be taut, and this re-kinking of yarn should occur in the original kinks formed at the Coulier and divide. Yarns that naturally retain the sinker and divide kinks will produce better fabric than yarn that does not retain its kinks. Silk, in the gum, seems to retain its kinks better than any other yarn, and Nylon is nearly a second. Some rayons, like cuprammonium, are fairly good in this respect, whereas other rayons are notoriously bad. Cotton retains its kinks very poorly, with lisle yarns the best of the cottons. A manual kinking test can be readily made to determine the kinking characteristic of any yarn by adjusting the stitch of a machine and its divide as has been suggested and then merely Coulier and divide the different yarn samples without forming them into a fabric.

Properly conditioned gum silk, when kinked with correct divide, will appear as illustrated in Fig. 3a; that is, with small, tight sinker kinks *S* and larger, broader needle kinks *N*. (Nylon when similarly kinked will appear about the same.) Such a kinked yarn, especially if each kink is maintained during knocking over, will produce the finest appearing fabric, as illustrated, Fig. 3b, and in the photograph of a silk fabric, Fig. 3c. The photograph of a Nylon fabric, Fig. 4, illustrates the formation of loops with Nylon yarns.

Rayon yarn kinks will appear as shown in Fig. 5a and the fabric will appear as shown in the drawing, Fig. 5b. It should be noted that the needle and sinker kinks are nearly alike, which is the reason why the resultant rayon fabric, shown in the photograph, Fig. 5c, does not show the desirable, narrow sinker waled characteristic of a silk full-fashioned fabric, as illustrated, Fig. 3c. Mercerized cotton yarn kinks are retained very poorly, as shown in Fig. 6.

Another factor that can greatly affect fabric appearance is the fabric take-up. Tension in take-up cannot be so heavy as it should be to aid effectively in evening the loops of a fabric after they are formed, because the wales of the fabric near the selvages do not go in a straight line to the fabric take-up roller. The fabric becomes narrower, reaching its minimum width between the fabric take-up roller and the needles. And it is this angular pull on the needles, at and inward of the selvages, that precludes successful use of heavy tension on the fabric take-up. However, relatively delicate needles at and near the selvages would be disaligned lengthwise of the needle series if heavy tension was used, thereby interfering with their properly registering with the sinkers during the upward movement of the needles after the knockover.

Fig. 10. Rayon full-fashioned fabric containing warp streaks and bird's eyes.

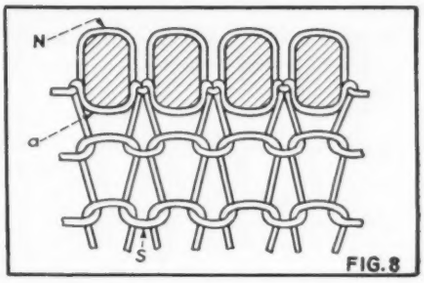


Fig. 8. Fabric knitted needle-tight.

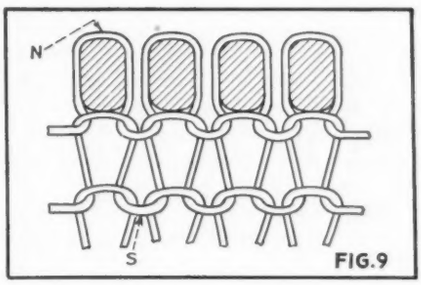


Fig. 9. Fabric knitted with weak yarn.

Because all the wales of the fabric do not lie parallel throughout the width of the fabric, it becomes necessary to use relatively light fabric tension. As a result, when a fabric with desirable small loops is being formed, all or certain of the needles as they rise, after the knockover, may contact the loop heads of the previous course. This will be understood by considering Fig. 7, which is a plan view of the needles, knockover bits, and fabric at the time the needles commence to rise. If the yarn of the previous course loop head, *a* Fig. 7, is not brought forward sufficiently by the fabric tension to permit the head of the needles *b* to come upwardly freely, the needle wale loop head of the previous course may become enlarged, with the result that a bird's-eye is formed in the fabric. Such interference, if continued in succeeding courses, produces a noticeably wide or enlarged needle wale with an adjacent narrow sinker wale.

Use of nibbed knockover bits tends to prevent the formation of bird's-eyes. These bits are thrust against the fabric, instead of relying on the forward pull of the fabric by the fabric take-up and the rubbing action of the new loops by the back curve of the knockover bits. Thus it appears that the nibbed knockover bits will effectively hold all the loop heads *a*, Fig. 7, as the needles rise. Although the nibs are beneficial, they do not perform fully this function, because they engage with the yarn of the just formed course, whereas the needle loop heads *a*, that are causing the unevenness and fabric distortion, are part of the previous course. Actually, what happens is that

the nibs contact the short curve of the bight of yarn *a* in a hit-or-miss manner and thereby aid to a limited extent in pushing the previous course forward.

A construction designed to solve this problem is an arrangement covered by U. S. Patent No. 2,126,797, in which the knockover bits act on the bight of yarn *c* Fig. 7, in the previous course, thus effectively pulling the previous course of loop heads *a* forward and clear of the heads of the rising needles *b*.

The writer has found in actual practice a definite and safe method of re-forming yarn kinks of a new course. In this method, the knockover bit bar is mounted so that it will spring upward with sufficient pressure as the kinked yarn comes off the nose of the sinkers and dividers. This yarn is immediately rekinked on the resilient knockover bit surfaces, which, because of their spring construction, permit kink maintenance throughout the time the needles are drawing the kinks over the knockover bit surfaces, regardless of whether loose or tight knitting is taking place. A resilient knockover bit bar construction of the type mentioned is covered in U. S. Patent No. 2,153,582.

It is feasible to use mechanical instead of spring-actuated knockover bits and maintain the yarn kinks taut during the knocking over by carefully forming the needle operating cams. However, if this is done, the slightest lessening of the loop length will cause cutting, although the lengthening of the loop will not result in an accurate, positive re-kinking of the new yarn. Actually, the knockover bit height is adjusted in existing machines so that cutting does not result when knitting coarse. When looser knitting is being done, the yarn kinks are not definitely re-formed by the knockover bits, with the result that an imperfect fabric may be obtained.

Fabric of the best appearance is obtained when knitting gum silk by having the ankle stitch adjusted so that there is just enough yarn in each loop to permit the shanks of the needles to move upwardly through the fabric, as illustrated in Fig. 8; that is, the fabric is needle tight. This can be done only with strong yarn and yarn that has considerable elasticity, because it requires that the needle loop of the previous course *a* be snugly kinked around the back of the needles with the sinker juncture point *b* between the first and second course pulled backward. Thus, each needle wale loop is effectively sized around the needle shank. This causes a decrease in the size of the sinker loops so that in the finished fabric, Figs. 3b and 3c, the loops of the needle wales are considerably larger than the sinker loops. This gives a desirable rib appearance to the fabric which materially resists loop distortion when the fabric is tensioned while in use.

Needle tight knitting can only be accomplished with strong yarn, such as silk, Nylon, or French lisle. With weaker yarns, the needle wales cannot be sized or remeasured snugly around the needle shanks, without cutting. Fig. 9 shows the formation for a weak yarn. In a resultant fabric, Fig. 5b, the sinker loops *S* are not much smaller than the needle loops *N*. This effect is also shown in the photograph of cuprammonium rayon fabric, Fig. 5c. It will be observed that the fabric loops, although lacking the full-fashioned characteristic shown in Fig. 3c, are nevertheless very good as compared with the other rayon fabric, illustrated in Fig. 10, in which wale streaks and bird's-eyes (individual, large needle loops) are clearly noticeable.

The fabric shown in Fig. 4, represents an average Nylon fabric which has been knitted fairly needle tight. Its appearance would have been improved if it had been knitted as needle tight as the silk fabric shown in Fig. 3c.

(The next installment of this short series of articles by Mr. Miller will appear in an early issue.—Editor)

Weaving Duck on Carpet Looms

(*Continued from page* 69)

each eye because of the limited eye-capacity of most boards employed in carpet mills.

WEAVING — Alexander Smith & Sons Carpet Co. are weaving successfully numbered ducks, ranging from No. 2 to No. 10 on tapestry and velvet carpet looms converted for this purpose. Loom conversion requires that all attachments to the top loom beam be removed and only the bottom loom beam used. Friction let-off is employed by means of a brake band and weights. It was found that a positive gear-type of let-off gave difficulty as it was hard to regulate.

Drag rolls on velvet looms are changed so as to tension the warp and reduce the strain on the harnesses. One method successfully employed at Alexander Smith consists of using three steel rolls about 6 in. in diameter as illustrated in Fig. 1.

The distance between the top of the back roll and the cloth level for a 12/4 loom should be about 4 in. for best results. This measurement should be considered when building tension rolls for the conversion of velvet looms.

Take-ups of the ratchet-type and of the positive worm-type have both proved successful, as they exert close control over take-up. A friction type of take-up tends to introduce an uneven number of picks in the duck, thus producing a fabric of variable quality.

The take-up roll must be modified, as the pins usually employed on these rolls on carpet looms will form small holes in the cloth. These holes constantly cause trouble where fabric porosity is a factor and where such fabrics are to be coated. Tin or sandpaper covering has proved satisfactory.

Wire mechanisms and all connecting parts contained on velvet looms should be removed, since they are unnecessary for the weaving of duck. Removal of this mechanism permits the loom to operate practically the same as any other single-shuttle loom. Again, it was found that cops could not be used in shuttles weaving duck, as a firm package of yarn could not be produced that would not slough. It is necessary, therefore, for a carpet mill to acquire quill-winders so they may wind their own quills.

Shuttle tension is important as variation will result in wavy selvages. Alexander Smith found that a satisfactory way to correct shuttle tension and eliminate wavy selvages is by employing a special type of spring in the shuttle.

Temples are unnecessary on heavy numbered duck and some carpet manufacturers have found that duck runs much better on their looms when temples are eliminated. This even holds true on some of the lighter ducks run.

At the duck forum it was brought out that fabrics reeded two ends to a dent, instead of three, seemed to produce a less porous fabric. It was stated that when fabrics were reeded three ends to a dent, the three ends were crowded together with a space between groups of threes. However, when woven on some looms, two ends to a dent seems to produce a fabric of closer construction without reed marks showing.

Speeds of converted carpet looms were found to be considerably slower than regular duck looms. At the Alexander Smith mill a 7/4 carpet loom at from 67 to 70 picks per minute; a 3/4 loom at 102 picks; converted carpet looms are operated at about the same speed as on carpets.

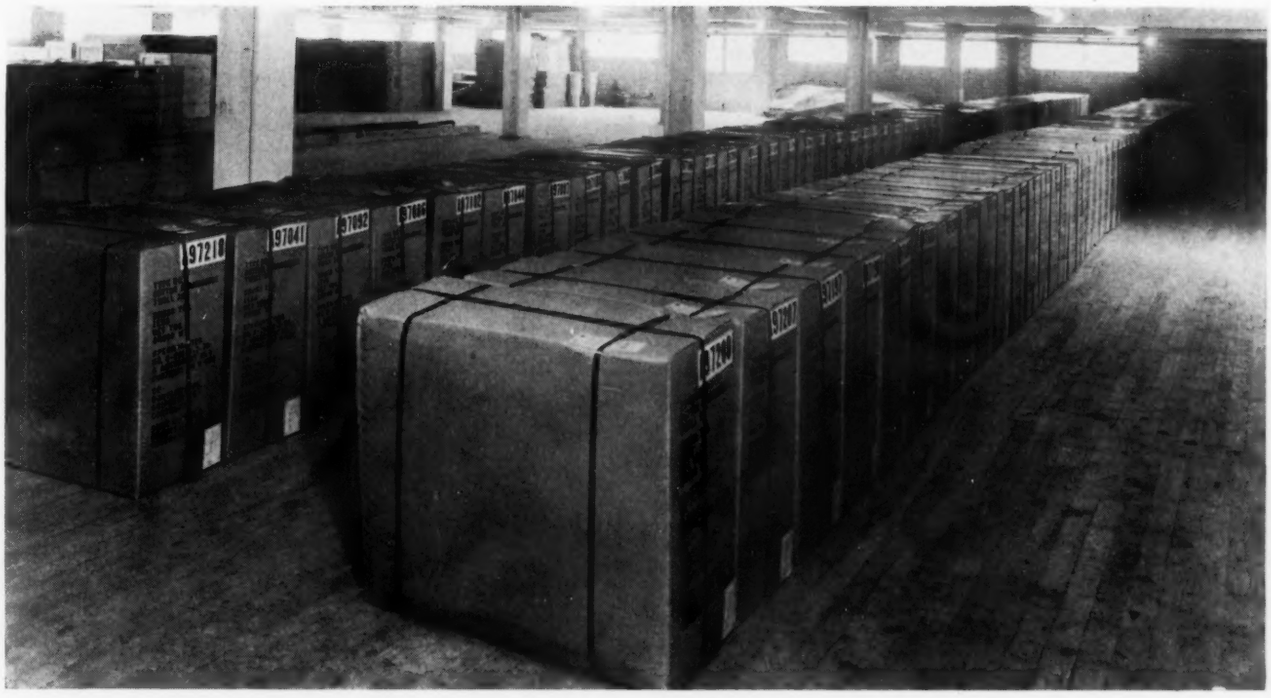


Fig. 1. Cotton herringbone twill for Army use packed for shipping in fiber containers reinforced with steel strapping.

Are You Packing Them Right?

War-time conditions impose new problems in packaging textiles for shipment

TODAY, packing and packaging methods demand attention—much more attention than the average plant has given them in the past. Faulty shipping-room practices cause damage, delay, waste, and needless expense. Mills working on Government contracts must meet rigid specifications pertaining to packing and packaging of shipments. Scarcity of some of the materials formerly employed for packaging and the necessity for conservation add to the problem. Shortage of labor in some textile localities must be offset by increased efficiency in shipping rooms.

Different types of textile products require different types of packing and packages. The method of shipment—whether by rail, water, or truck—influences the choice. Customer preferences and carrier regulations must be considered. For these reasons, shipping practices necessarily vary greatly in different plants, and there is no one best method which is applicable throughout the industry. Therefore, it is up to the management of individual companies to work out the most suitable procedures for their own plants. There are two questions which those responsible for packing and packaging of textiles should ask themselves:

1. Am I using the type of packing and package best suited to each product shipped?
2. Are my shipping-room methods as economical and as efficient as possible?

Photos 1 and 2 Courtesy Signode Steel Strapping Co.

Fig. 2 Baling and strapping cotton sheeting for shipping.

The answer to the first question involves a study of best commercial practice and of Government specifications. Each invitation to bid on textiles purchased by the Army, Navy, Marine Corps, and other Government procurement agencies states the type of packing and packaging to be employed. In some instances, the materials are described fully in the specifications for particular textiles; for example, U. S. Army Specification No. 6-247, covering unbleached cotton drill, states that the cloth shall be put up in bolts of 1- or 1¼-yd. folds; that the bolts shall be

Fig. 3. Beginning of "Assembly line" packaging at Muscogee Mfg. Co.

Photos 3 to 6 by Coze; courtesy Acme Steel Co.

Fig. 5. Sealing, weighing, and stenciling cartons; note scales built in conveyor.

packed in bales of approximately 1,000 to 1,200 yd. each; and that the bales shall be fully lined with suitable paper, covered with new burlap, and securely strapped. Fig. 1 shows the method employed by a large southern mill for packaging herringbone twill in fiber containers reinforced with steel strapping. Fig. 2 illustrates a satisfactory method of baling and strapping cotton sheeting for shipping.

In other instances, the reference is made to one or more of the following specifications covering packing and shipping: (1) Army Specification 23-54-B; Boxes and Crates for Shipment; (2) Federal Specification NN-BO621a; Boxes, Wood, Nailed and Locked Corner; (3) Federal Specification NN-B-601; Boxes, Wood, Cleated, Plywood Construction; (4) Federal Specification NN-B-591; Boxes Wood, Cleated, Fiber Board; (5) Army Specification PQD68; Boxes, Fiber; (6) Army Specification 100-2; Marking Shipments; (7) Army Specification 19-60; Kraft Paper, Waterproof, Duplex; and (8) Federal Specification UU-P-268a; Paper, Kraft, Wrapping.

In still other instances the specifications state that "commercial packages" will be acceptable; that "best commercial packing to insure acceptance by common carrier at destination in good order and first-class condition" is required; or that the commodity shall be delivered "in standard commercial containers so constructed as to insure acceptance by common or other carrier for safe transportation at the lowest rate to the point of delivery."

Fig. 4. Strapping cartons in "assembly line" packaging.

UNDER PRESENT CONDITIONS, plant executives in charge of shipping must be constantly on the alert if they are to keep informed at all times as to what constitutes "standard commercial containers," and "best commercial practice." This is due in part to the growing shortage of some of the materials formerly considered to be "standard," and in part to the introduction of new types of packing and packaging materials. For example, whereas cotton gray goods usually have been packed in form of bales and wrapped in burlap, when present stocks of burlap are gone substitutes must be used. Again, use of cellophane for packaging hosiery is now prohibited, and restrictions have been placed on use of envelopes, wraps, and boxes.

Wooden boxes and cartons are employed extensively as shipping containers for textiles for both military and civilian use. These are available in numerous types, and textile manufacturers can obtain from the manufacturers of packaging equipment full information on the features and recommended applications of each type. One point to remember is that steel strapped cartons can be shipped at the bale rate.

SPECIAL WATERPROOF PAPERS for wrapping and packing of certain types of textiles are rapidly gaining in favor as replacements for materials which are no longer obtainable. A typical paper of this type consists of two layers of kraft paper reinforced with fibers, which in turn are embedded in asphalt. Such a waterproof paper is strong, tough, and pliable; used properly, it protects goods during shipment and storage and helps to reduce claims for damaged goods.

Several booklets on packaging and shipping practices have been issued by the American Management Association. Two of these—"Technical Progress in Shipping Containers" and "Meeting the Shipping Container Shortage"—contain data which should be of particular interest to textile manufacturers.

SHIPPING-ROOM PRACTICE can, in many plants, be simplified and streamlined to advantage. Just what can be done depends, of course, on the volume and diversification of products which are packed. A large mill with a more or less steady flow of goods is capable of greater simplification than in a smaller plant with an intermittent or irregular packaging schedule.

As shown in Figs. 3, 4 and 5, Muscogee Mfg. Co., Columbus, Ga., uses a straight-line system, incorporating a conveyer. Fig. 3 shows the beginning of the "assembly line," with inspected goods being packed in cartons. The pieces being packed are individually wrapped, but the carton to the right contains ordinary folded cuts. Of course, the usual practices of assembling and weighing carton lots, and the operations of opening knocked-down cartons are carried out before the goods reach the stage shown here.

Fig. 4 shows the second step. An operative puts steel straps on the cartons, using an overhead reel for the strap and a one-piece strapping tool mounted so that it slides back out of the way when not in use.

Fig. 5 shows the final operations. One operative applies tape to the top and edges of the strapped cartons, while a second operative stencils on the weight and other information. Note the scales built into the conveyor. As each carton passes over the conveyor rollers in front of the scales, the operative has only to read the gross weight from the scales. From here, the packages pass on to the point from which they are trucked away.

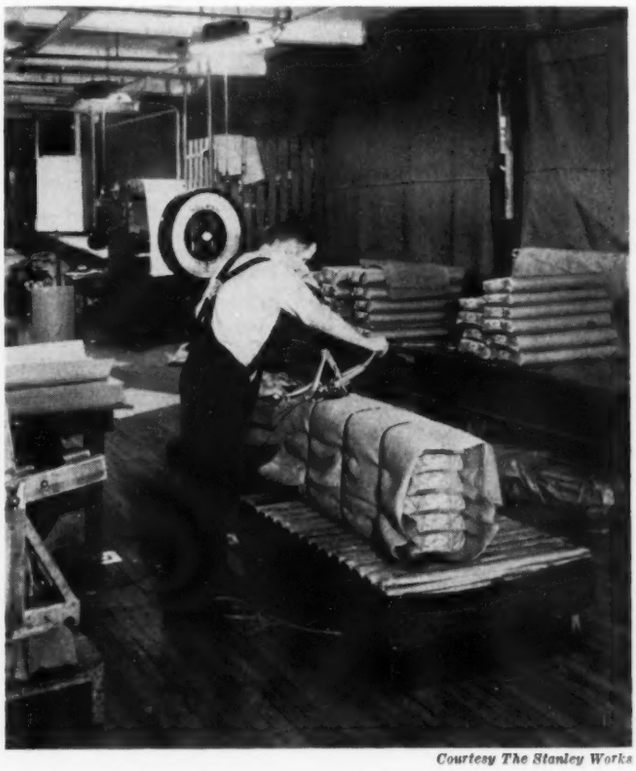
Fig. 6 shows the method of packaging warp tubes at one of the plants of Bibb Mfg. Co. One man packs cartons and straps them. Weighing and stenciling can be done either as the cartons are packed, or later.

THE BALING SYSTEM in use in one large southern mill, which makes print cloths, sheetings, and drills, saves an estimated 30% in cost over some other methods in use. Bale ties and bale coverings are pre-cut by the press operators; a foot-operated tie-cutter, mounted on a table of convenient height, allows a pressman to cut an 8-hr. supply of ties in 20 min.

Two pressmen cut bale coverings and ties at the same time, one cutting his own supply of coverings and the other cutting his own ties; then the two men change places. Thus, in 40 min. a pressman can supply his needs for an 8-hr. shift. Bale coverings are cut on a frame. One piece of the covering is always the same width, but is cut to different lengths in order to cover fabrics of different widths. A second piece is always the same width as the fabric baled. Stitching is required only about $\frac{2}{3}$ the way around each end. This system of cutting coverings saves an estimated 20% covering material over some methods in use, and it is possible for a press crew, consisting of pressmen and helper, to turn out a bale every 5 min. The helper sews the ends, stencils the markings, and trucks the bale away.

THE SHIPPING ROOM SYSTEM recommended for smaller plants is, in general, as follows: (1) Achieve as steady a flow of materials as possible; (2) Have only sufficient regular packers to take care of ebb requirements, but arrange jobs so that sufficient help to take care of peak loads can be called when needed; (3) set up working forces with one or two men to a force, depending on size of package to be handled; (4) arrange working space so that a smooth flow is achieved. Arrangement of working space for such a system can be either straight-line or double-back. The straight-line system requires two pairs of scales, one for obtaining net weight and the other for gross weight. The double-back method, which usually is satisfactory in smaller plants requires only one pair of scales.

Fig. 6. Packing warp tubes in cartons in one of the plants of Bibb Mfg. Co.; same operative does the strapping.



Courtesy The Stanley Works

Fig. 7. In this plant bolts of cloth packaged in paper are wrapped in burlap and steel strapped.

Making Spun Rayon Yarns

Pointers on handling rayon staple fiber on cotton, woolen, and worsted systems

By RENE BOUVET
American Viscose Corp.

WITH COMPARATIVELY FEW CHANGES, existing cotton machinery can be used for the processing of rayon staple fiber. Staple fiber reaches spinning mills free from impurities and extraneous matters so that the cleaning operation, as generally necessary when dealing with other types of staples, can be dispensed with. This feature is interesting in view of the bearing it has on processing cost and waste elimination. The stock is also partly open so that it does not call for any more than a reasonable conditioning and a gentle further opening.

Pickers work the staple into laps, and cards transform the laps into card slivers. Carding probably is the operation during which the most arresting change in fiber arrangement takes place. The function of the card is to disentangle the staple, to eliminate foreign matters that may have found their way into the stock, to change a lap weighing in the neighborhood of 14 oz. to a linear yard into a sliver weighing about 50 grains to the yard, introducing at the same time a slight degree of parallelism.

Contrary to a fairly common assumption, the parallelism taking place in the course of carding is negligible. The action of the card clothing is such that the staple emerges from the doffer with no definite orientation. If it were not so, if a high degree of parallelism existed at that stage, the web, which is veil-like, would not hold, but would tear before reaching the condenser rolls. True parallelism really develops during the several subsequent operations.

The processing following the carding is carried out on drawing frames, whose function it is to blend, draft, and start the staple on the road of parallelisation. Generally, up to six card slivers are run jointly and drafted, so that the resulting drawing finisher sliver is nearly equal to the size of the original card sliver. In the course of this operation further parallelism and additional blending take place. The roving is gradually reduced to the size needed for the spinning process.

The next step calls for the use of fly frames. When using conventional frames, three operations are needed to obtain the finished roving. A minimum of twist is inserted in the roving, merely enough to give the strand sufficient strength to work well in the next process.

When using long-draft frames the finished roving can be completed in one operation. Mills equipped with such equipment are in a position to eliminate two roving processes, provided the size of the roving sought is within the limitations of the frame.

The quality goal that spinners endeavor to attain in producing spun rayon yarns is three cornered. It calls for evenness, strength, extensibility. To embody the three of them in the same yarn presents some complex problems; fortunately they are somewhat simplified when using rayon staple fiber, because the fiber is clean, uniform in length, strong, and possesses a good extensibility. However, none of these qualities can be expected unless the spinning frame is supplied with a good, even roving, and well-made bobbins.

Insufficient twist in the roving will cause ends down. Too high a twist will lead to undue breaks; furthermore, it will interfere with even drafting, and will create weak spots. The spacing of the draft rolls should be adjusted in keeping with the length and type of the staple processed. Too close a setting will cause an unusual fiber breakdown, will sap the yarn strength, and in some instances will produce "cockled yarn." Too broad a setting will not permit adequate control of the draft and will lead to unevenness. Perfect contact between bottom and top rolls is also important to assure uniformity of draft. Obviously, there are very definite limits one can not trespass without paying some penalty either in the form of loss in production, or quality or both.

DRAFT RATIOS for conventional and long-draft spinning depend largely on the perfection of the roving, the type of the equipment, the nature of the staple processed, also the mill conditions. The desirable range for conventional spinners, run double creel, is from 10 to 13. Long draft frames, run double creel, will give excellent results with higher drafts from 16 to 18. When operating single creel, practical drafts are in a slightly lower range—7 to 10 for conventional—8 to 12 for long draft. These figures are advanced as a broad guide for average type staple and average count.

A factor of vital importance is twist and its effect on yarn strength. The number of turns of twist decided on may be chosen to obtain the best strength, or for the production of a particular effect. A certain amount of twist is needed to bind the fibers together. When set on the low side, it fails to harness all fibers into a solid group and, therefore, allows room for slippage, resulting in a loss of strength. When the twist reaches beyond a certain point, it tends to shear the fiber, through torsional strain, the obvious effect of which is to reduce the strength.

Experience shows that there is a given range within which the twist is to remain to obtain optimum strength. A 30/1 yarn made of 1.5-den. 1 9/16-in. staple will show its best strength with a twist multiplier of 3. The twist multiplier should be somewhat increased on finer counts. Coarser staples also require higher twist multipliers. A 20/1 yarn made of 3-den. 1 9/16-in. staple will demand a twist multiplier, of 3¼. A 16/1 yarn made of 5 den. 1 9/16 in. staple will reach its best strength with a twist multiplier of 4.

Of course, much higher twist multipliers can be used to obtain specific effects. 20/1 crepes are being spun with twist multipliers of 11 or 12. Experimentally, they can be spun and woven filling-wise with as high a twist multiplier as 15 with the proviso that fine denier and strong staple is used. The loss in strength caused by twist follows fairly well the actions known to take place on continuous-filament rayon crepe yarns, with the exception that the whole picture is further complicated by the reactions to be expected from differences in staple size and length.

The strength of continuous filament yarns can readily be calculated. It

Abstract of paper presented at a meeting of the American Association of Textile Technologists held April 15, in New York.

equals the product of the fiber denier strength and the total deniers. This method of figuring is not applicable without some modification to spun yarns.

TESTS INDICATE that a 100% spun rayon staple fiber yarn of average count, such as 30/1, and spun with a twist multiplier chosen for optimum strength, is 75% as strong as a comparable continuous filament end. The term comparable applies specifically to size and fiber strength per denier.

The 75% expectancy holds good for average counts and fine deniers such as 1.5 den. It is affected downward when dealing with coarser staples, finer counts and twist multipliers beyond the optimum strength range.

The point of extensibility is of great importance to weavers. Whenever the yarn is consumed warpwise, in fabrics of which the warp is slashed, good extensibility is essential. The experience of weavers is that a strong yarn having low extensibility does not perform nearly so well as a somewhat weaker yarn having excellent extensibility. If high strength and high extensibility could always be had together, there would be no difficulties. So far, the emphasis has too often been placed on the point of strength. Yarn technicians have a good opportunity to assist by incorporating all possible structural changes favoring extensibility, even if a slight drop in strength should result therefrom.

To retain maximum extensibility, spinning frames should be operated with the lightest tension. Rovings should contain just enough twist to run. Roll setting, ring size, traveler weight, spindle speed, all should be chosen to preclude undue tension. In other words, all possible precautions should be taken to prevent any strain, for strain is what reduces extensibility most.

The subject of "spin limit" is one of interest to spinners and technicians alike. Is it possible to estimate the finest count that can be efficiently spun with a given staple?

Many elements enter into the equation and no single answer can be formulated. Remaining within the scope of 100% spun rayon, it would appear that the presence of 70 staples, within the cross-section of the yarn is needed to assure efficient spinning. This does not mean that as soon as fewer than 70 staples are dealt with, the spinning becomes unmanageable as no line as fine as that could be drawn.

In being guided by the 70 staple rule, it can be estimated that 60/1 yarn is the efficient spin limit for 1.25 den., 50/1 yarn for 1.5 den., 25/1 yarn for 3 den., etc. Those figures are based on 1½ in. staple length. With longer length, the spinning can be carried on with fewer staples and finer counts can be spun efficiently.

Most of the points brought up in this discussion apply equally to the processing of blends. Rayon staple fiber is being blended successfully with practically all other known staples—acetate, cotton, ramie, flax, all kinds of animal hair, wool, rabbit, camel, goat, and possibly dog hair.

In principle, there should be enough rayon in the blend to carry the other constituents. Except when combined with cotton, the breaking strength of the blend is close to the strength of the rayon alone. Other constituents do not help much to build up the strength. This holds true for blends carrying 50% or more of rayon staple fiber. When going below the 50% mark, the strength imparted by the other constituents becomes more noticeable.

BLENDS comprising 50% of rayon and 50% of wool are being spun very successfully on the cotton system. This gives but one illustration as to how helpful rayon staple fiber may be at times like these when it is found necessary to make our wool stock go a long way. Of course, the priority recently clamped on wool has a telling effect on what can be done for the present. At the same time, it behooves the trade to scrutinize what low-grade wools, still unaffected by priority offer for civilian uses.

The suggestion to investigate the merits of rayon staple fiber and wool garnet deserves attention. White garnet is scarce, but dark dyed garnet is abundant. Dyed garnet requires a strong stripping and once stripped, is still off white. However, it may be satisfactory for medium shades.

Woolen equipment as found today in most plants is suitable for 100% rayon processing. It is desirable to give to the stock a straight oil treatment, also to reduce the amount of carding as compared to wool. This can be accomplished in various ways, such as by passing the intermediate card. Maintenance of low tension helps to produce desirable yarns. Drafts somewhat higher than applied to wool are practical.

Standard worsted equipment, in its present form is also highly suitable for rayon staple fiber processing. There again, a straight oil treatment is helpful. Carding should not be violent. French and Noble combs require no major changes. Sliver twist as given on drawing frames should be held to the point where fiber breakdown is avoided and uniform drafting made possible. Ratches may be set closer than usual. Higher drafts than for wool can be used in spinning.

Spun-rayon yarns can be produced on cotton machinery with comparatively few changes.

Fluorescent Lighting

Has raised standards of illumination; hints on installation and maintenance

By EARLE MAULDIN
Southern Editor, TEXTILE WORLD

MILL MANAGEMENT is interested as never before in plant lighting. Efficient lighting, it has been found, not only lowers worker fatigue, but frequently results in increased production and a higher quality product. Not many years ago it was not unusual to find a spinning room lighted to the 5, or 10 foot-candle level of intensity. In fact, many rooms were then considered to be well lighted with this intensity. Today, lighting specialists speak in terms of 50, 60, 80, 100 foot-candles and undoubtedly the development of fluorescent tube lighting has made possible such intensities. The light itself is efficient, economical, cool, closely approaches natural daylight in color, and has a low unit brightness that does much to eliminate glare.

The enthusiasm with which the textile industry has accepted fluorescent lighting may cause one to overlook the fact that each installation should be designed, or "tailored" to fit the peculiar requirements of the job. Only in this way can full satisfaction be assured. The factors of glare; intensity; color, are not to be disposed of by rule of thumb, nor necessarily by personal preference. Experience and an intimate knowledge of the possibilities of the equipment are essential to a well-lighted plant.

Three years ago the fluorescent light emerged from the experimental stage. Since that time there have been many developments and improvements. The rated life of the tube has been increased 66%; the efficiency in lumens per watt has been stepped up 40%; the strobo-

TABLE I—CHARACTERISTICS OF FLUORESCENT LAMPS

Watts (Lamp Only)	*Length, Inches*	*Diam., Inches*	*Bulb*	*Operating Voltage*	*Rated Life Average*	*Lumens, Output*	
						Daylight	*White*
6	9	5/8	T-5	110–125	750	155	180
8	12	5/8	T-5	110–125	750	250	300
14	15	1 1/2	T-12	105–125	1500	370	460
15	18	1	T-8	110–125	2500	495	615
15	18	1 1/2	T-12	110–125	2500	495	615
20	24	1 1/2	T-12	110–125	2500	730	900
30	36	1	T-8	110–125 119–216 220–250	2500	1200	1450
40	48	1 1/2	T-12	110–125 199–216 220–250	2500	1700	2100
65	36	2 1/8	T-17	110–125	2000	1800	2100
100	60	2 1/8	T-17	110–125 199–216 220–250	3000	3350	4200

Westinghouse Electric & Mfg. Co.

Lonsdale Co., Blackstone, Mass. Two lamps per fixture provide abundant light for this weave room.

scopic effect has been eliminated by means of improved ballast design; and the price trend has been steadily downward. Fixtures have been designed, redesigned, and improved, making maintenance easier and offering properly designed equipment for almost any difficult application.

Table I indicates the wide range of sizes available in fluorescent lamps. In addition to the fluorescent lamps listed in this table, there is available the rectified current lamp known as type RF, furnished in one size only. The following specifications apply: 85 watt; 58 in. long; 1¼ in. tube diam.; rated life 3,000 hr.; average light output 4,000 lumens (in either the industrial-white or blue-white); operates on line voltage of 95 to 125, or 200 to 250 volts. The auxiliary, which is sealed in a dust-tight case, is lighter than previous types and has no moving parts.

Fluorescent lamps for industrial applications are furnished generally in one of the following three colors: daylight (6500°K); white (3600°K); and soft white. The soft white contains more light in the red end of the spectrum than is found in either of the others. Daylight, as the name indicates, is a close approximation to natural outside daylighting. It does have a slight deficiency in the red end of the spectrum, making it appear bluer than natural daylight. But it blends well with daylight. It is not particularly satisfactory for exact shading or color matching and must be used with care if provided for this particular operation.

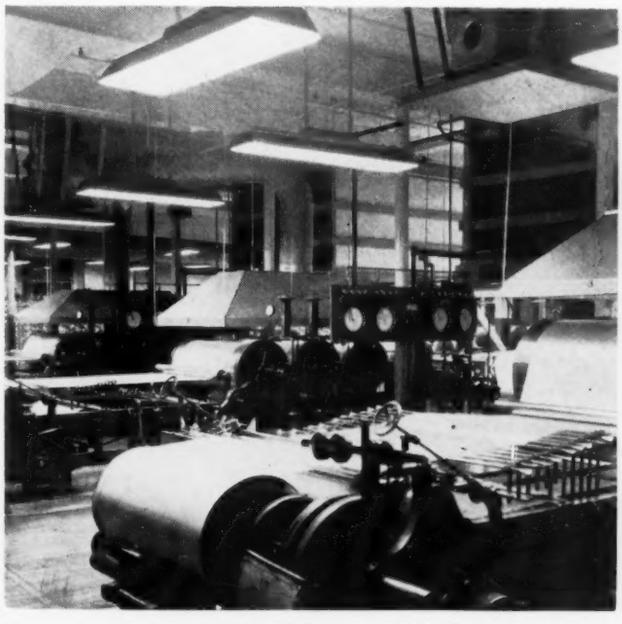
AUXILIARY CONTROL EQUIPMENT is necessary for the operation of all types of fluorescent lighting. Standardization of auxiliaries by reliable manufacturers insures the purchaser of satisfactory service. The auxiliary of most manufactures contains the ballast, the starting switch, starting compensator, and power factor control. It is good practice to have the starter mounted in the face of the reflector or at some point accessible from the outside of the ballast mounting.

It is important to see that the line voltage is kept reasonably close to the voltage indicated on the fixture. If operating on a voltage of 110 to 125, best results are procured if the actual voltage lies close to the middle of this range, say at 118 volts. If voltage is too high, the ballast over-heats, the ends of the tubes soon blacken, and the useful life is shortened. On the other hand, if voltage is too low, a flickering lamp results and the frequent flashing shortens the life of the tube.

STROBOSCOPIC EFFECT. Since the light emanating from the tube is primarily dependent on an alternating current, with the magnitude of the current as well as the direction changing with each successive cycle, the stroboscopic effect is inherent in the design. With incandescent filament lamps operating on alternating current, there is no stroboscopic effect for the simple rea-

TABLE II—RECOMMENDED LEVELS OF ILLUMINATION FOR GRAY GOODS MILLS

Operation	*Food-candles*
Storage, Opening, Mixing, Picking, Carding, Drawing	5–10
Slubbers, Intermediates, Roving, Spinning	10–20
Spooling	
Warping (on comb and running ends 10 foot-candles)	
Slashing (on comb and warp beams 10–20 foot-candles)	15–30
Drawing-in by hand (general, 10 foot-candles)	100+
Automatic Tying-in (general, 10 foot-candles)	50–100+
Weaving (on cloth)	40–60
Inspecting (cloth turned by hand)	20–50
Cloth Room	10–20



Yarns, leasing section, and beams of slashers are evenly illuminated by this arrangement of lighting.

Hygrade Sylvania Corp.

Well-illuminated warp yarns prevent crossed ends from being drawn-in when breaks occur.

son that the filament retains a large proportion of its heat during the low spot in current magnitude. It is true that the phosphorescent powders used to coat the inner surface of the tubes carry over with a certain amount of glow, and this tends to minimize the stroboscopic effect, but it is present in some amount, depending on the character of the coating powder used in the tubes.

The remedy lies in design of the improved ballast already mentioned. This ballast is important in good lamp performance, and only fixtures which are equipped with ballasts meeting approved specifications should be used. The manner in which adjacent lamps are connected to the distributing system on a three-phase circuit will also have an effect on the stroboscopic characteristic of the light. By arranging the connections so that the low point in the light output of one lamp corresponds with the high point in the other, the stroboscopic effect is practically eliminated in the combined output of the two.

Metal reflectors are used exclusively in industry. Plastics may later invade this field, but at present this newer material is confined to home and commercial installations. Standard specifications of reliable manufacturers govern the materials to be used; the angle of cut-off; dimensions; contour; and efficiency of the reflector.

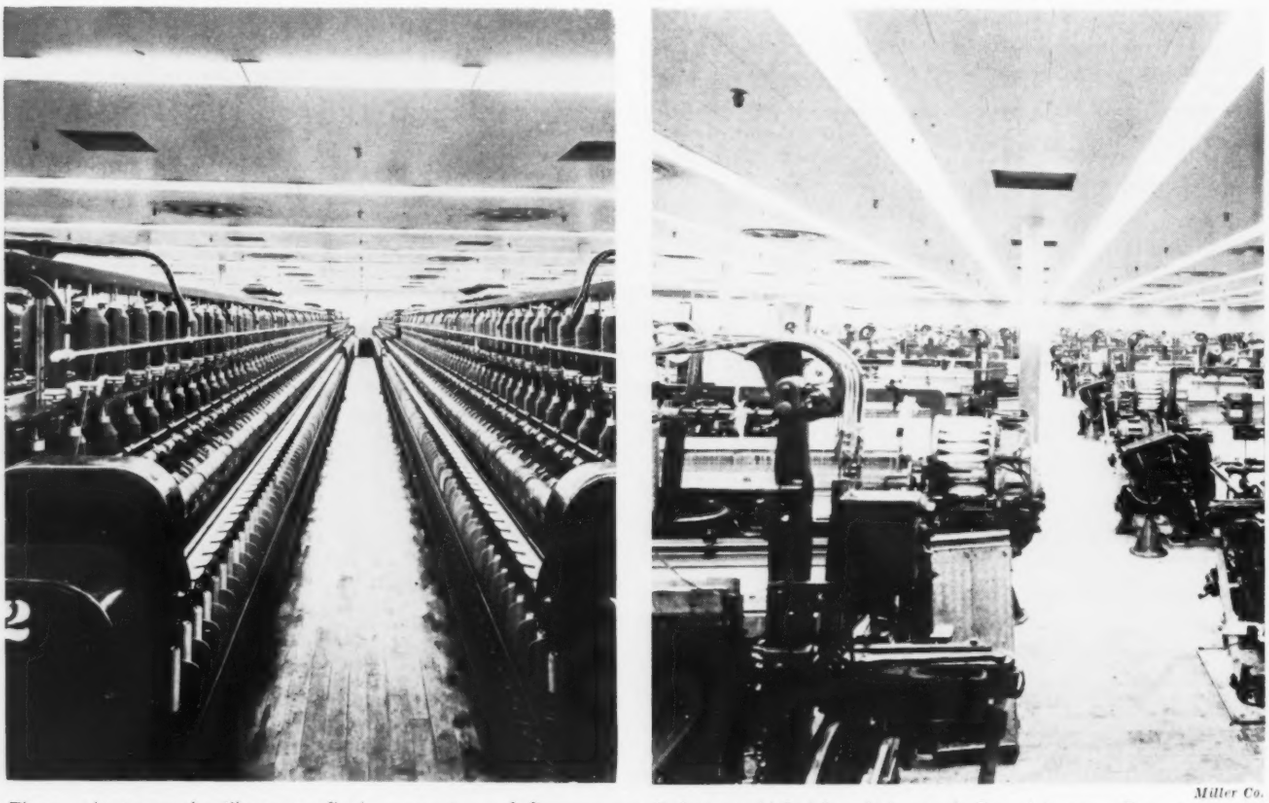
Benjamin Electric Mfg. Co.

Wiscassett Knitting Mills, Albermarle, N. C., obtains 60 foot-candles at footing machines and 90 foot-candles at topping tables.

MAINTENANCE. Reflectors should be selected which are easy to clean, and the mounting arrangements should be selected after due consideration is given the subject of maintenance. Tube failures will occur at irregular intervals, becoming more regular as the old and new tubes are blended in the installation. Some method must be devised for making these tube changes without interfering with work in process. Step-ladders, or movable scaffolds on casters, etc., usually serve this purpose. Some mills employ a special truck with a body built to accommodate extra tubes, repair parts, and the necessary tools. This truck is mounted on casters and pushed by hand around the mill. It is important, however, in planning an installation that the two main items—tube replacements and cleaning—be made as simple and easy as possible. It is also important that burned-out tubes be removed immediately as the starting equipment may otherwise be damaged.

The cleaning schedule will vary in different departments of the mill, depending on the amount of fly or dust in the atmosphere. In order to obtain the maximum benefits from the installation, this schedule of cleaning, once established, should be faithfully followed. A damp rag is all the cleaner needs. Some mills find it advisable to have a competent electrician check over the fixtures occasionally to correct any loose connections that may have been caused by building vibrations.

Lower plant-accident rates are pos-



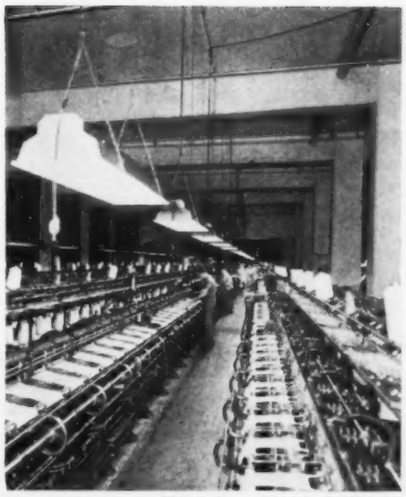
Miller Co.

These photographs illustrate flush mounting of fluorescent lights at Uxbridge Worsted Co., Macon, Ga., so as to form a continuous trough of light. Intensity of 60 foot-candles is obtained at the looms.

sible when various sections of a mill are lighted to the approved intensity. Wet spots on a floor are more easily avoided; moving belts, and machinery parts become less dangerous because more clearly seen; good housekeeping is stimulated, and plant morale is raised.

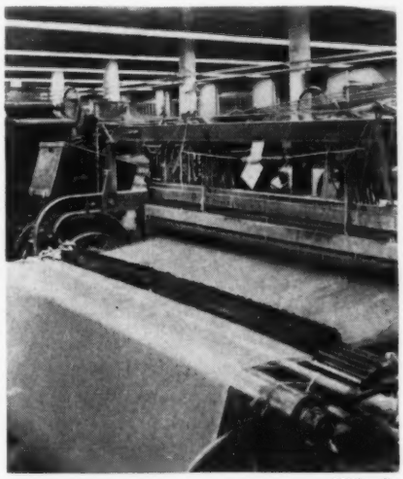
Intensities of light that should be provided for various departments of the mill cannot be a matter of hard-and-fast rule. The character of textile work varies too much to permit standardization. Each installation should be built around the particular requirements of the job. The Committee on Industrial and School Lighting of the Illumination Engineering Society has completed some valuable studies along this line and their recommendations have been published in their Transactions (Vol. XXXII No. 3 for gray goods and denims, and Vol. XXXIII No. 1, for silk and rayon throwing and wide goods weaving).

Table II is reproduced from I.E.S. Transactions Vol. XXXII, No. 3 with permission from the Society.



Westinghouse Electric & Mfg. Co.

A full-fashioned hosiery mill in Chattanooga, Tenn., obtains 35 to 40 foot-candles on stockings being knit.



Miller Co.

Trough-type of fixtures suitable for weaving rooms.

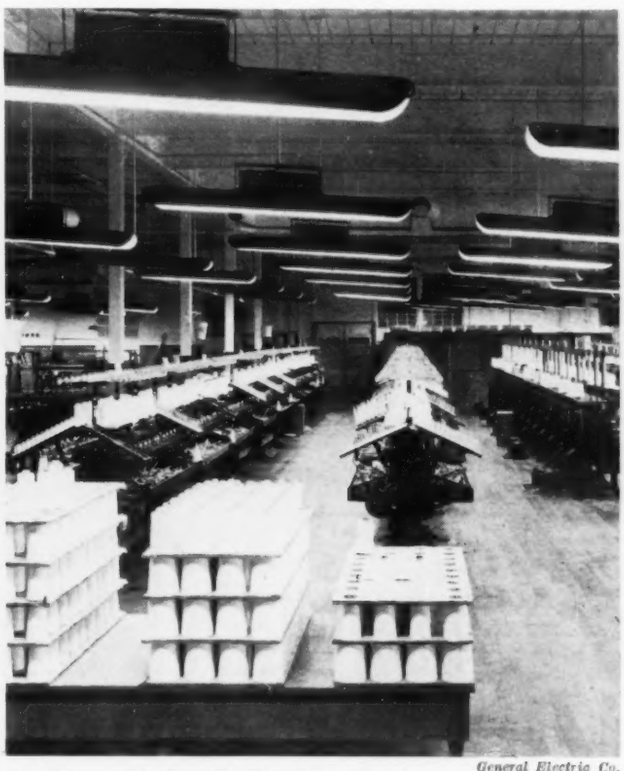
WPB's GENERAL LIMITATION ORDER No. L-78 dated April 2 announces the freezing of all fluorescent lighting fixtures and parts except on orders having a priority rating of A-2 or higher. Until June 12 jobbers are permitted to sell fixtures or parts which they now have in stock. After that date, they can sell or deliver only on orders bearing an A-2 or better rating, or for parts sold for maintenance and repair. *Editor.*

Hygrade Sylvania Corp.

Another arrangement of fluorescent lighting suitable for weaving mills.

Day-Brite Lighting, Inc.

Trough lighting lowered to a slight distance above the knitting machines to obtain high light intensity.



General Electric Co.

Mid-State Cloth Mills, Red Springs, N. C., obtain 45 foot-candles at quilling machines.

Aridye Pigment-Dyeing Process

Provides new method for producing fast-color olive drab and other plain shades

A DEVELOPMENT in textile processing which could not have come at a more timely moment is the recently announced Aridye pigment dyeing method for producing fast-color plain shades on cottons, spun rayons, and mixtures. Already accepted by the Quartermaster Corps for producing the standard olive-drab shade on herringbone twill, the new process is proving valuable also for dyeing twills, jeans, reps, shirtings, sportswear fabrics, and other materials where a high degree of color-fastness is required. Aridye colors for pigment printing are emulsions of the water-in-oil type made by dispersing pigments in a solution of synthetic resins into which water is emulsified. As they are made from materials which are relatively abundant, their introduction at this particular time will assist greatly in offsetting the shortage of dyes and chemicals employed in vat dyeing. Further, use of the pigment-dyeing process results in a marked saving in time, thus increasing the capacity of the dyehouse.

The present range of Aridye colors for pigment dyeing includes yellows, browns, greens, pink, blue, and gray, which may be blended to make a variety of shades. Tests made by United States Testing Co. indicate that fabrics dyed with these colors do not contain any primary irritating substances of a chemical nature, and that the fabrics are more resistant to abrasive action, mildew growth, and chlorine than are comparable fabrics dyed with vat colors.

Application of Aridye pigmented emulsions for the production of plain shades requires a specially designed arrangement of equipment to produce best results. Proper equipment is available in many textile finishing plants today, but in practically no case is the arrangement of this equipment such as to produce best results. An engineering survey should be made to determine whether existing equipment can be made to meet the following basic requirements or whether it will be necessary or desirable to design special equipment for this purpose. Following are the application methods recommended by Aridye Corp.:

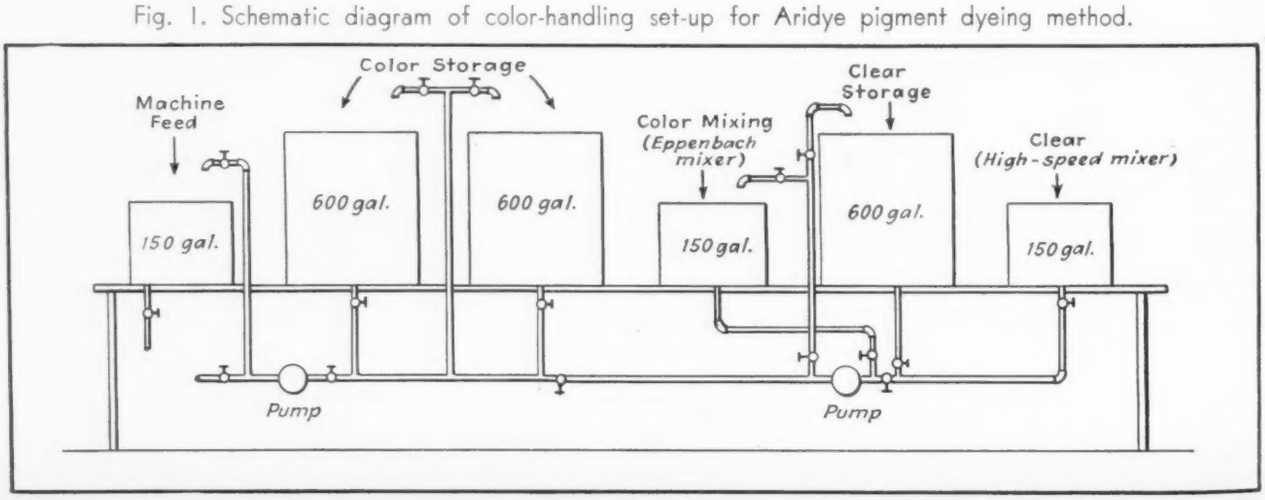
The four basic steps in the Aridye pigment dyeing method are: padding, predrying, drying, and curing.

THE BASE COLORS as received by the mill are in the form of emulsions with a high concentration of pigments. They are reduced in shade by addition of an unpigmented resin emulsion called a "Clear." This is made by the mill from a concentrated resin solution, a petroleum solvent, and water. The procedure is to dilute the resin with the solvent. Then, while a high-speed mixer is running in the diluted resin solution, water is added at a constant rate. The high-speed mixer breaks this up into small droplets, which are dispersed in the organic phase. The result is a Clear that is approximately 50% water and contains about 5% of the concentrated resin solution. A typical set-up that can be used in a mill for making up the color is shown in Fig. 1. At the right side is a 150-gal. tank in which is placed a 3-hp. "Lightnin" mixer. When the Clear is made, it is pumped over into a 600-gal. storage tank and drawn off from this into a 150-gal. tank equipped with an Eppenbach Homomixer where the blend of color and Clear is made. This is then pumped over to 600-gal. storage tanks from which it is pumped into the box of the padding machine. A representative color mix for an olive drab shade would be approximately: 79.5 lb. Brown DWKG, 32.5 lb. Green DJ2K, 6.5 lb. Grey LK2B, and 135 gal. Clear.

Padding may be accomplished with a three-roll or two-roll padder of such construction that it will force the color to penetrate the fabric uniformly with the least possible excess. This requires a dip and nip padder with extremely high squeeze. If the goods contain too great an excess of color, there will usually be difficulty in drying. It is extremely important that all rolls which touch the wet goods be free turning. As the solvents have some swelling action on ordinary rubber pad rolls, the rolls require an occasional turning down to remove the surface. Better results have been secured with Hycar synthetic rubber. However, these are not suitable for use with caustic; therefore this covering should not be used if the padder is to be used also for soluble dyes that contain caustic. A three-roll hydraulic padder with two small color boxes is desirable. A shallow pan allows one to renew the color continuously and there is less waste at the end of the run. Although the color can be saved from one run to the next, there is always the possibility of contamination in the color pan. Accordingly, the less there is to be put back in the storage tank, the better.

THE DRYING OPERATION may be divided into two stages. The basic requirement is that the cloth be heated

Fig. 1. Schematic diagram of color-handling set-up for Aridye pigment dyeing method.



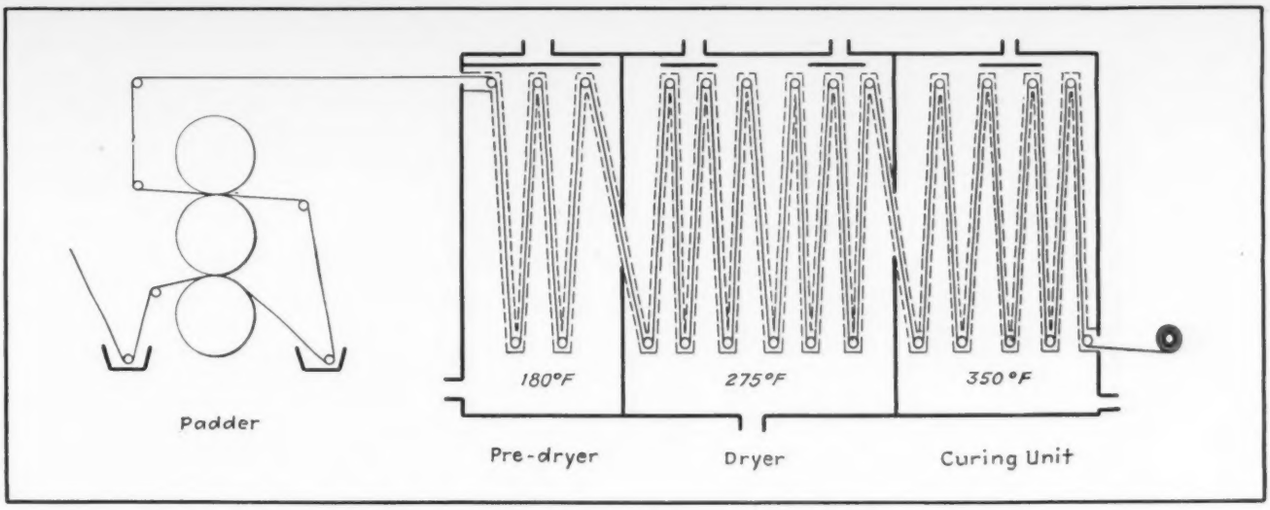


Fig. 2. Typical layout for continuous padding, pre-drying, drying, and curing.

gradually and uniformly throughout. Therefore, the first stage requires the application of a moderate heat (an air temperature of about 180° F.) in such a way that it will penetrate the cloth, subjecting both sides to exactly the same drying conditions. During this stage, ventilation to remove the solvent is extremely important. The padding liquor is approximately 50% solvent, and much of this comes off in the first stage of drying.

In the second stage, the temperature may be considerably higher (air at 275 to 300° F.), so long as the heat is applied uniformly to both sides of the cloth. Ventilation is necessary at this point also to remove both water and solvent vapors.

In general, it may be said that such results can be accomplished with existing air dryers that are revamped to increase the ventilation and possibly with well-designed and well-regulated dry cans that are housed and ventilated. Since much depends on the performance of the equipment and the requirements of the particular cloth construction, decision should be made only after consultation with the manufacturer of this equipment or a qualified heating engineer.

On light-weight goods, the pre-drying operation is much simpler than on heavy. Thus, ninon and other similar light fabrics can be run over a series of rolls in a box with two unit heaters blowing across the goods from the selvages. Infra red heaters have been used on several different weights, with the cloth passing between two banks of burners, the number of burners depending on the thickness of the cloth. It is possible, and in most cases desirable, to have the pre-drying take place in the same unit with the drying. This may be by means of any one of several types of roller dryers, such as are used for Indigosols and naphthols. With these designs, it must be possible to regulate the temperature in the different sections and also to blow the heated air directly onto the cloth at right angles to it and from both sides. Whatever way this operation is performed, it is essential to have proper ventilating equipment.

It is possible to batch the goods after the pre-drying and then take them to another part of the plant for drying, although the ideal set-up, and the most economical, is to run the cloth right through from padder to finished goods. The drying can be completed on cans, on a tenter frame, in a loop type dryer, or other equipment. If a frame were used directly after the padder, there would ordinarily be migration and clip marks, but this is not true if the cloth is given a pre-drying, because that operation will serve to drive off enough of the water and solvents to cause bodying and location on the fibers. Generally speaking, if the cloth is properly pre-dried, the drying can be handled in any normal fashion.

Cloth leaving the last stage of the drying will in most cases contain small quantities of high-boiling solvents. Those must be removed and the temperature of the *cloth* raised to 280 to 300° F. by means of circulating air (preferably not over 375° F.) to cause the resins to change chemically (polymerize) so that they will be resistant to solvents and to mechanical washing.

If steam is available at the curing unit at a pressure of at least 150 lb., it is possible to effect this curing with a properly designed steam unit. If the pressure is below 150 lb., several alternative types of equipment are available. The gases of combustion from natural or city gas, with proper safeguards, may be blown directly on the goods, or air heated by oil fire in a heat interchanger may be utilized. With all such equipment, proper design will prevent the accumulation of solvent vapors at any point in quantity sufficient to make an explosive mixture. Any gas- or oil-fired unit should have safeguards to prevent the fuel supply from feeding when the pilot light is off.

After curing, the goods should be skied to cool and batched on a roll.

Equipment designed specifically for Aridye pigment dyeing might combine the drying and curing units with an increase in efficiency. The padder may be placed directly in front of such a unit and the whole operation accomplished with no handling. A typical layout is shown in Fig. 2.

Although soaping after curing is not necessary, it may be desirable on certain cloths. Soaping will soften the hand, and remove any excess pigment and dirt.

THE FIRE HAZARD in application of Aridye colors for pigment dyeing creates only a moderate fire hazard. To reduce this still further, Associated Factory Mutual Fire Insurance Cos., makes the following recommendations:

1. Totally inclosed motors should be provided if they are located below the level of the liquid supply tank where the liquid could be splashed on the motor. If the drive is arranged with the motor overhead or to one side where splashed liquid cannot reach it, the common squirrel-cage induction type of motor can be used.

2. An extinguisher suitable for use on flammable liquid fires should be provided in the vicinity of the padding machine to combat possible fires that might occur in this location.

3. Adequate ventilation must be provided in the dryers or in the vicinity of the dry cans. It will be necessary to provide ventilation in the ratio of 10,000 cu. ft. of air for every gallon of flammable liquid evaporated. If any motors are required in the inclosed spaces where the vapors exist, explosion-proof equipment will be needed.

4. This entire process should be located under sprinkler protection, and high-temperature sprinklers should be provided in the dryers. The type of heads that should be provided may be determined by temperature readings taken when the equipment is in operation.

Cause of Crimp In Wool

New theory important to combers and spinners; further research is required

By ALDRED F. BARKER, F.T.I.
Emeritus Professor, University of Leeds

The theory set forth in the following article merits the careful attention of both mill men and research workers. An outstanding authority on wool, the author is well-known for his books, "Woolen and Worsted Spinning," "Wool and the Textile Industry: Raw Material to Finished Fabric," and "Wool Carding and Combing," which was written with E. Priestley as co-author.

A COMBER OR SPINNER when handed a good sound lock of wool, such as a typical Merino wool, will look at it carefully, test it by handling and then probably say, "A good sound wool with a nice crimp." In making this statement, he is under the impression that he is commending the wool of which the lock is supposed to be representative. Then, he considers the matter of crimp as it is an indication of wool quality, and illustrated by the relationship between quality and crimp given in the following table.

As a wool staple is crimped, so may it be expected to spin—22 crimps to about a 70s yarn, 20 crimps to a 64s yarn, 18 crimps to a 60s yarn, etc. This, of course, only indicates the spinning qualities of various wools according to their fiber diameters, many crimps indicating a fine fiber diameter and a few crimps a thick diameter of fiber.

Attention is also paid to the type of crimp; thus, a sample of wool submitted for criticism was said to have "a nice crimp." In other words, sheep breeders have sought to produce a fleece with a good crimp whenever the type of wool under consideration of combers and spinners demand good crimp, thinking that such a crimp is an advantage in both combing and spinning processes.

Professor J. E. Nichols in his book entitled "A Study of Empire Wool Production" writes: "In a staple with well-defined and uniform crimp, the individual fibers are similar in waviness. Where they differ in the phase of their waves, the staple exhibits as a whole little pronounced crimp; but in the case of sound, well-grown Merino wools the crimp shown in the staple maintains a uniform phase throughout."

This quotation illustrates the general conception and significance of crimp, held by the industry.

A Lincoln lamb wool staple is illustrated in Fig. 1. If both ends of the staple are held between the finger and thumb of the left hand and similarly by the right hand about an inch from the end and an endeavor be made to straighten the fibers to eliminate the crimp, it will be discovered that it cannot be done. In this staple there is a center of straight fibers, and the crimped fibers are looped about the straight ones simply to bring them within the sphere of influence, in other words, these looped fibers are sometimes nearly double the length of the straight fibers which define the length of the lock. An analysis of this particular lock is given in Fig 2, in which the length mean deviation is 27.7%. This value is higher than normal owing to the staple being taken from a lambs fleece. In a Merino lamb fleece a corresponding mean deviation of 25.4% has been noted, but this again is higher than that from the corresponding fleece wool.

It may be asked whether the crimp in a Merino wool is to be attributed to the same cause. An analysis of 70s quality Victorian Merino, Fig. 3, will reveal to following fact: that the mean deviation is only 7.4%, the staple being fleece wool. Thus, we are brought face to face with the fact that none of the information concerning crimp has considered that crimp is simply evidence of variable length of fiber growth. The importance of this fact to both combers and spinners need not be enlarged upon, as it is sufficiently evident.

If crimp is mainly due to the varying rates of growth of the fibers composing the wool staple, it may be desirable to examine wools in which this phenomenon is likely to be most marked. Two examples of wool will be considered: viz., a Lincoln X Merino and a Border Leicester X Merino wool staple.

A Lincoln X Merino staple is illustrated in Fig. 4. The most remarkable revelation is that about two-thirds of the fibers composing the staple are of the straight type and one-third of the crimped type, these latter being 60% longer than the straight fibers.

CRIMP PER INCH IN WOOL

Wool Quality	*Crimps per in.*
80	22
70	20
64	18
60	14
56	10
50	8
44	4
40	3
36	2
32	2
30	1

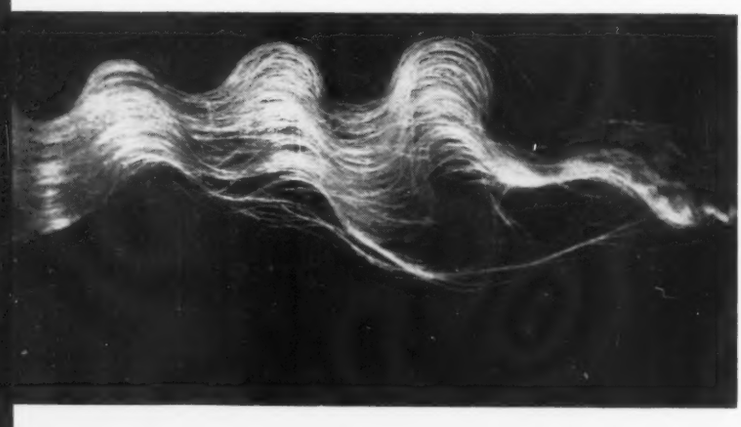


Fig. 1. Staple of Lincoln lambs wool.

Fig. 2. Analysis of fiber length, Lincoln lambs wool. Fig. 3. Analysis of fiber length, 70s Victorian Merino.

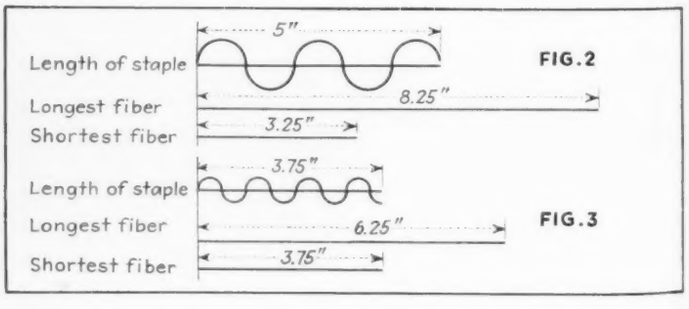


Fig. 4. Natural staple of Lincoln X Merino wool.

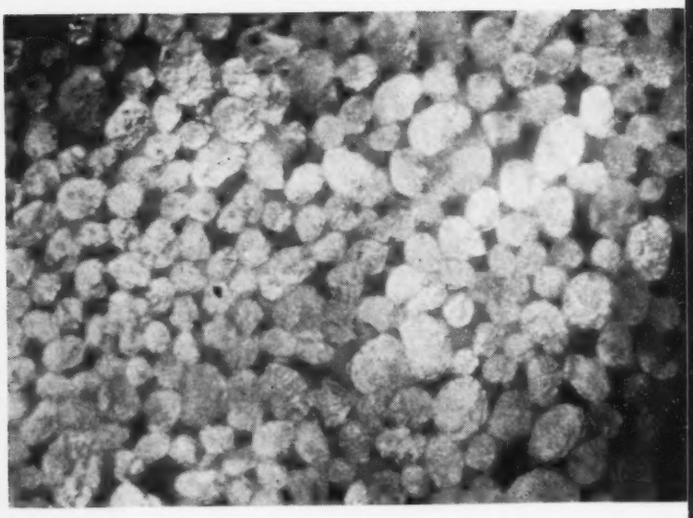


Fig. 5. Cross-section of Lincoln X Merino fibers (225X).

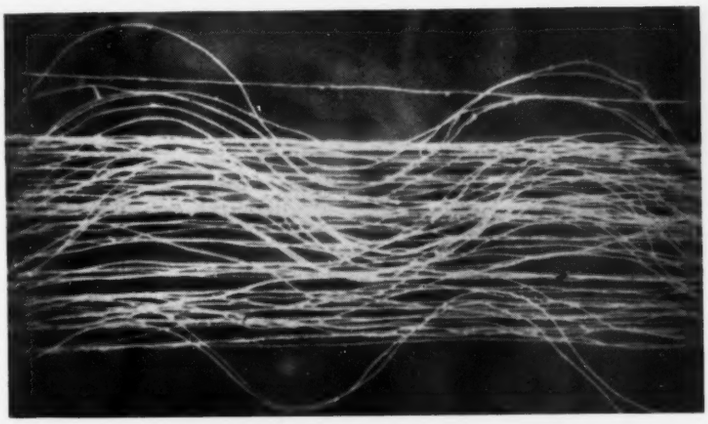


Fig. 6. Lincoln X Merino staple drawn to reveal straight and curved fibers (16X).

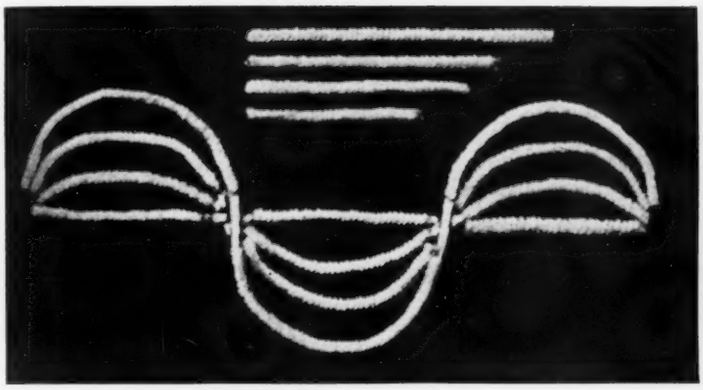


Fig. 7. Creation of a wool fiber crimp from four lengths of fibers.

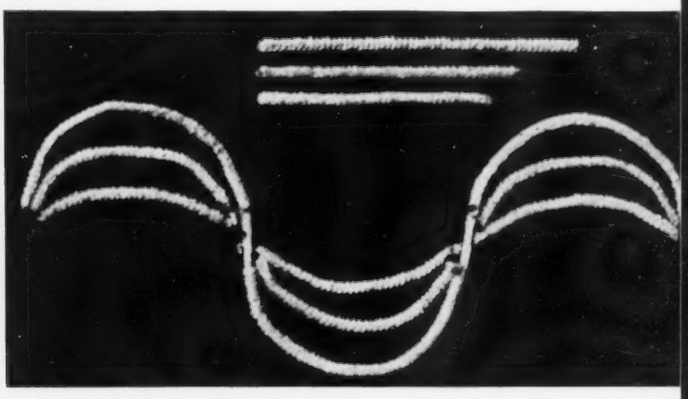


Fig. 8. Wool fiber artificially produced.

The long fibers have an average diameter of 1/780 in., and the shortest fibers have an average diameter of 1/960 in. with a mean deviation of 19.7%, thus suggesting that the fleece is growing two-thirds Merino fibers and one-third Lincoln fibers. Microscopic examination, however, fails to differentiate between the scale structure of the long and short fibers. If the difference in scale structure had helped to define these fibers as Lincoln and Merino respectively, an interesting result would have been presented. That the diameter difference between the long and the short fibers is very marked is shown by Fig. 5 which is a cross-section of a bundle of fibers taken from the same fleece. On taking cross-sections of bundles of fibers from even, fine qualities of Merino wools, it is surprising that the finest qualities show little variation in fiber diameter.

The observed results with Border Leicester X Merino staple are so similar to the Lincoln X Merino wool that there is no point is giving them. However, this point can be illustrated by taking a well-defined crimped staple firmly between the finger and thumb of the left hand and the finger and thumb of the right hand, allowing about 1½ in. between the two grasped points. Now endeavor to straighten out the crimps by pulling hard; then hold it up to the light in this stretched condition and the effect shown in Fig. 6 will be clearly seen. Examination of an 80s Cape Merino (Swellendam) indicates that about half the fibers are straight and half are curved, from which it appears to be probable that different types of wools are very different with reference to this proportion. In the fleece of a wild sheep the strong hairs grow straight through the finer undercoat of fibers and have little or no effect on them. It would seem, therefore, that one of the conditions for a crimped growth is that individual fibers should have such an external structure that they cling to and control one another.

In Fig. 7 is shown a theoretical building up of the wool crimp attempted from four different lengths of fibers. Of course, in the actual wool staple the short fibers are bent to a certain extent, owing to the influence of the curved fibers. The corresponding effect is obtained by removing the short, perfectly straight fiber (Fig. 8), when the similarity between the crimp artifically produced and the natural crimp cannot be mistaken.

An investigation of the combing and spinning properties of "crimped" and "straight" staple wools should produce a marked difference in tearage and in the counts of yarn spun from the two types. The straight wool should give a better combing result, and a finer count and a stronger yarn, other things being equal. Further, the straight fiber would never give rise to the objectional waved effect noticed towards the selvages of dress face cloths when yarns spun from crimped fibers are employed.

Credit is extended to Professor Agar, Melbourne University, for making possible the author's investigation of the crimp in wool fiber at Melbourne University.

"Down Mobile Bay"

Alabama cotton manufacturers pledge slogan "Utmost Protection for Victory"

THE FOURTH ANNUAL MEETING of the Alabama Cotton Manufacturers Association pledged the industry of the State to "Utmost Production for Victory" and this became the slogan for the gathering. Approximately 150 textile men, members with wives and guests, registered for the meeting at Grand Hotel, Point Clear, Ala., April 24.

Benj. C. Russell, president of the association, in his address, said "Our own individual problems pale into insignificance beside our national problems and present international emergencies."

The cotton-textile industry, he then continued, is now far out in front with a splendid record of production and cooperation, and has not been appreciably slowed down by besetting difficulties." "Everything that might interfere with production has been laid aside and forgotten, and through teamwork the textile employers and employees have gone to work to produce for victory" he said, speaking for the industry of the State.

Judge John D. Petree, director, Department of Industrial Relations, State of Alabama, explained the consolidation of boards and commissions in the State Government, and reported briefly on the various activities of his department.

Dean J. E. Hannum, School of Textile Engineering, Alabama Polytechnic Institute, asked the members to encourage attendance at Auburn and stressed the importance of the training there as a means of filling vacancies which are constantly occurring in the mill. To help meet demand for technically trained men, he went on, Auburn has developed the cooperative system whereby two students assume one full-time job, alternating three month shifts of work and study.

New President, J. Craig Smith, at the meeting.

Toastmaster Hugh Comer tells a good one.

J. Craig Smith, vice-president, presided at the luncheon. He presented Dr. Claudius T. Murchison, president, Cotton-Textile Institute, who discussed the imminent problem of production-conversion. At the present time the industry is producing at approximately double its normal rate, Dr. Murchison said. Possibly 12,000,000 bales will be consumed in 1942. Peak production is a collective problem requiring the cooperative efforts of the Government, the industry, and the public. Some of the factors making necessary this rapid step-up in the program are: silk embargo, allocation of rayon, restrictions on use of wool for civilian use, cutting off of jute imports. Production must continue to increase still further in order to meet allied demands as well as the requirements of the army and navy. Conversion is the answer. Mills that have never produced osnaburgs, narrow sheetings, drills, twills, and ducks, must change over to such of these fabrics as they are equipped to produce. Questionnaires are out or are being prepared, to enable WPB to determine just how and where this can be done.

"The next great crusade," he concluded, "will be against legal red tape that enmeshes administration and prevents increase of production."

Sherman Rogers, formerly editor of the *Outlook* and frequent contributor to the *Saturday Evening Post* was the guest speaker at the banquet, over which Hugh Comer presided. "From 1930 to 1940" said Mr. Rogers, quoting statistics from the U. S. Department of Commerce, "the textile and leather goods industries produced an income of $22,200,000,000. Employees received of this, $21,242,000,000 while stockholders received the remaining $958,000,000. During this ten-year period employees received 95.7c. out of each dollar of income produced." Mr. Rogers urged the management in industry to get this fact before the public "in language which they can understand," and forestall any misleading statements which might come to them from others.

At the final session, with C. W. Young presiding, Major William A. Dominick and Captain T. H. Vaden clarified the situation in regard to the Selective Service System in the State, and Professor Ben H. Crawford, of Alabama Polytechnic Institute, reported on the Alabama Textile Operating Executives of which he is executive secretary. The following officers were elected for the coming year: president, J. Craig Smith; vice-president, D. H. Morris, Jr.; treasurer, J. Arthur Cook; directors, Homer Carter, Hugh Comer, Thomas Cousins, R. C. Forrest, R. W. Jennings, J. T. Phillips, B. G. Stumberg, R. A. Wells, Chas. W. Young.

For the association, Hugh Comer donated two handsome trophies for the best safety records among Alabama mills. The contest for the period ending December 1941 closed with Goodyear-Decatur Mills ahead in the spinning and weaving division, and Adelaide Mills in the division for spinning mills only. Closely trailing the winners were Bemis Bros. Bag Co. and Dallas Mfg. Co., for spinning and weaving; Linen Thread Co. and Standard-Coosa-Thatcher Co., for spinning.

In the lobby: (from the left) Ernest Key, D. H. Morris Jr., Chas. E. Estes, Claude Iler

On the sunny lawn: (left to right) Wm. H. Randolph Jr., Floyd Childs, and W. N. Dulaney

FIXING HOSIERY MACHINES

FULL-FASHIONED MACHINES—Chapter XVI—Loose Course and Rocker Mechanisms

By WALTER A. SIMOND

LOOSE COURSE AND ROCKER MOTIONS must be synchronous with the knitting of the fabric; and carefully set or re-adjusted to prevent costly smashes. In setting the loose course and rocker cams, have them clear the follower rollers by 1/32 in., with the rollers held to the limit of their working positions with the camshaft in the narrowing position. When the regulating shaft levers move in for the narrowing cycle, any roller that comes in contact with the front edge of a wing or segment cam will either cause the cam boss to be turned on the camshaft or break a lever off the regulating shaft.

Loose course cam rollers are first set to equalize the pressure on both cams, and then so both rollers contact the cams at the same time. The depth or size of the loose course is changed on some of the earlier machines by means of an eccentric lever which may be adjusted for loose course welts, picot and mesh lace narrowings, and the looper course. On Reading machines of the latest design, the loose course levers have four buttons of different heights, three of which may be automatically brought under the regulating pin, 15 (Fig. F36), by means of a single rod and buttons of different heights on the narrowing chain. To adjust the loose courses to the fabric being knit, change the buttons on the loose course lever to get the desired size of loose course stitch. Adjusting pin, 15, should remain in a fixed position.

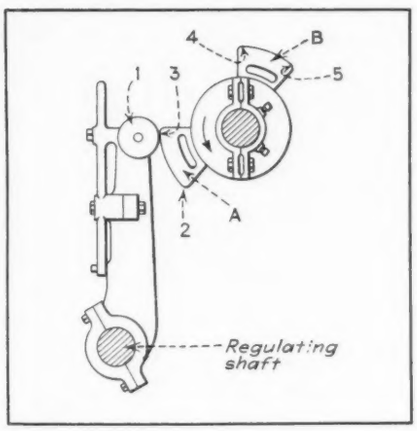


Fig. F38. High-splicing rocker.

Rocker cams and rollers may be accurately set, as follows: Inch the machine along onto the loose course cams —after their motion is correctly set— until a thickness feeler gage can be inserted between the rocker cams and their rollers, and adjust the rollers by the gage to equalize the pressure. This method is preferred over the old way of turning the rollers under pressure against the cams, as an excess of oil on the rollers or a gummy roller axle may result in a wrong setting. Next, set the rocker cam rollers to obtain the length of stitch required in the reinforced sections of the fabric as shown in Fig. F 37, and then set the wing cams in relation to the inside selvages, 4 and 3. In order to prevent the inside selvage from being too tight, it will be necessary to complete and restart the rocking motion from 2 to 6 needles inside of the reinforced sections, suiting the excess width to the size of the splicing, or heavier fabric as in a two- or four-needle overlap for sole or two-needle split for high heel or split sole. In coarse-gage machines, the corner, 4 (Fig. F 38)—when a plain type rocker is used for straight selvages only—may have to be beveled slightly so the needles will not be moved too quickly when the sinking of the stitches is changed from the center of the fabric to the reinforced portion. When this sinking of the longer stitches begins, the shorter stitches already drawn, in the center of the fabric, cause the sinkers in that section to move backward, and too rapid movement may disturb the kinked yarn or thread to cause cuts.

THE CRADLE TYPE ROCKER, with the cam piece, 1 (Fig. F 39), at the center of the Coulier stroke and the sliding guide piece pushed to one side, is set so the cradle clears the cam piece, 1,

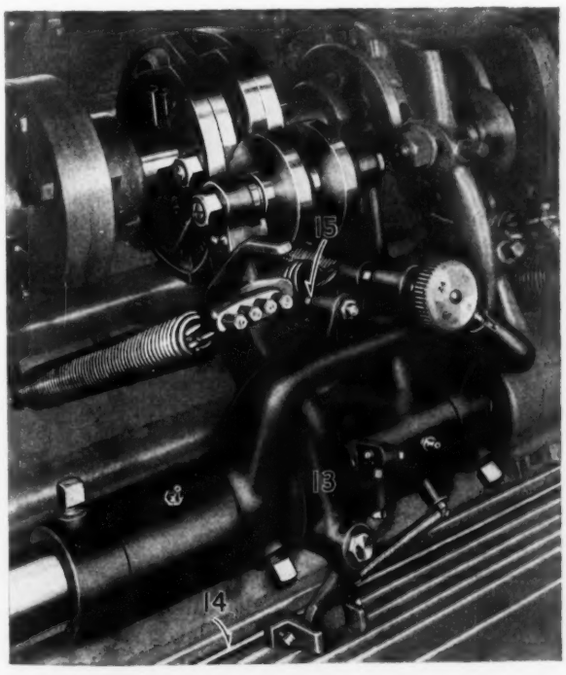
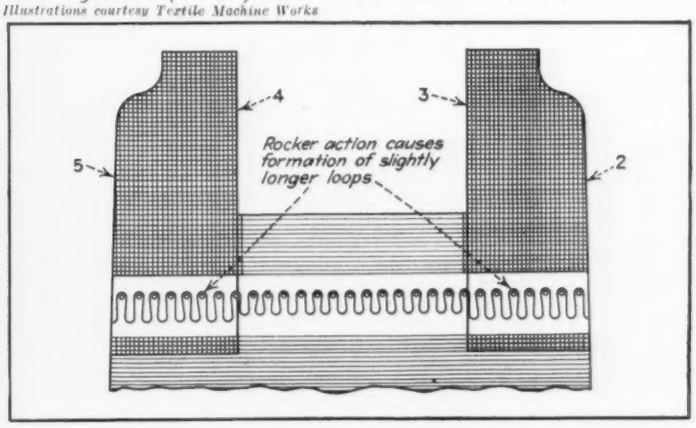


Fig. F36. *(Left)* Loose course adjustment.

Fig. F37. *(Below)* Reinforced section of fabric.

Illustrations courtesy Textile Machine Works



when the stitch adjusting screw is in contact with the axle of the roller of the stitch regulating lever, 7. Adjust the stitch for the reinforced sections, and then the movable slides, 3, to synchronize the oscillating motion of the cradle to knitting of the heavier sections of the stocking. Set the screw which limits the movement of the cradle, and lock it, being careful not to interfere with the working movement. Whenever the length of the rods, 4, which connect the slides, 3, to the selvage nuts are changed, care must be taken to have the collars and their setscrews, under the selvage nuts, in such positions as will not interfere with the movement of the slurcam boxes.

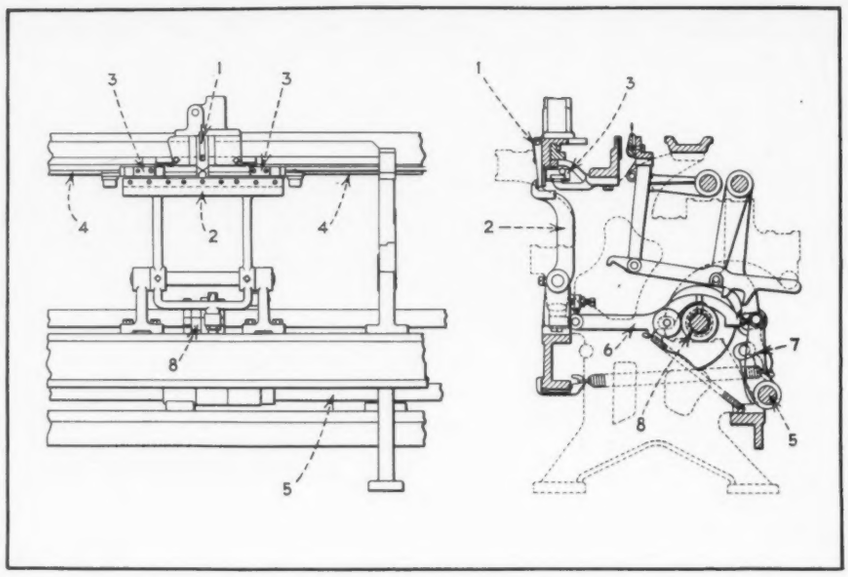


Fig. F39. Cradle type rocker.

CIRCULAR MACHINE—Chapter XVI (Cont.)—Wrap and Reverse Plating Patterning

By JULIAN W. HUGHES

NEEDLES raised to receive the wrap yarns are elevated by jacks below and in the same slots with the needles. This is illustrated in Fig. C38, *A*, which shows a cross-section of the lower portion of the cylinder. The butts of these jacks are shown projecting outward around the cylinder, as indicated by the numerals 13 to 20. At the lower right-hand side of the figure is the jack cam assembly consisting of cam 21, slide 22, and bellcrank lever 23 which is pivoted at 24 and connected to the actuating thrust bar at 25. Fig. C38, *B*, shows elevation of the same. It can be seen that the jack cam 21 is a flat piece of steel set at an angle to the jacks and so constructed that when it is moved to the cylinder the butts glide upward on its surface; when no wrapping is required, it is moved away from the cylinder so the butts may be lowered again. The cam for lowering is shown at 26, Fig. C38, *C*; by contacting the needle butts and sweeping them down to their normal level, this cam lowers the needles elevated to receive the wrap yarns and their jacks simultaneously.

From Fig. C38, *B* and *C*, it is readily apparent how important it is that these cams slide freely to and from the cylinder. If the guides 27 should wear, or the supporting screws should work loose through neglect, it might cause enough play to disturb the settings. Since the jack and needle butts revolve with the cylinder at speeds of 180 to 200 r.p.m., it is necessary for these cams to act in a fraction of a second and to be in position to act on the right butt at the exact instant. If normal wear in the various connections between the cams and the pattern drum is neglected, there is lost motion. In the aggregate, this may be enough to cause the cams to act too late.

If lint and grime are allowed to accumulate here it will cause the action of the cams to be sluggish, and this, too, is not conducive to perfect wrapping. Therefore, the supporting members of the cam assembly must be kept securely fastened, and this can be done by seeing that screws are not allowed to work loose. Moving parts must be kept snugly fitting and well lubricated; but an excess of lubricating oil causes lint and grime to adhere to the wearing surfaces and this is more a hindrance than a help. And in this connection, carbonized oil should never be allowed to accumulate on bearing surfaces.

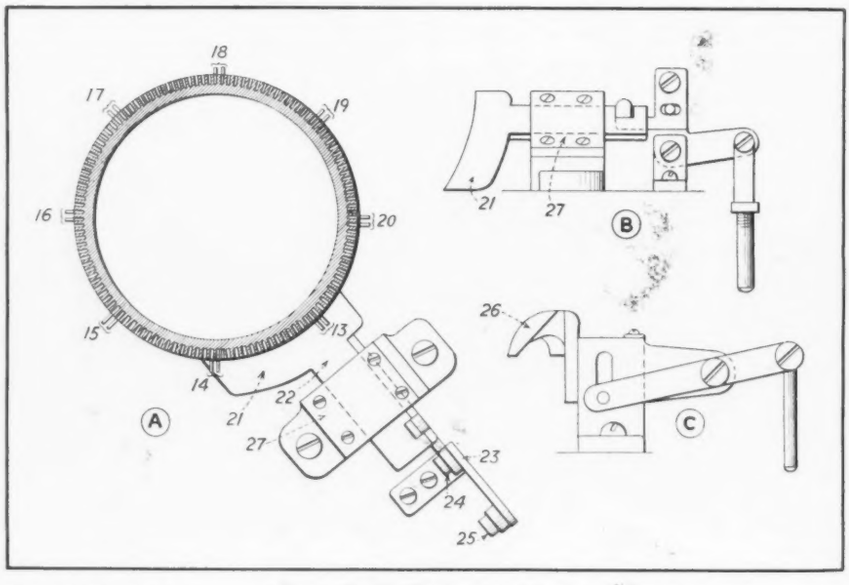


Fig. C38. Mechanism for producing knitted fabric having lap stripes and yarn variation.

TEXTILE EQUIPMENT NEWS

Drawing Aprons—French System

French drawing aprons of the best quality formerly were imported from France and Belgium. Recently, however, Henry K. Barnes Co., 8 Irving St., Salem, Mass., has developed a new

French drawing aprons (Barnes).

rub apron, called Finisham, which is said to be superior to types formerly available because of a new tanning procedure employed. The Finisham rub apron is made of leather tanned and manufactured in the United States to meet the strict demands of overseers of French drawing. The manufacturers state that it will not stretch excessively, run off the rolls, or produce "twitty" yarn.

The tanning of hides intended for Finisham aprons involves a combination of minerals and other products, plus a new method of currying, which is the introduction of grease into the leather to improve its pliability and tensile strength. Nine steps are involved after the hide has been through a thorough beam-house treatment, as against the usual two steps. At each step the processing solution is brought to a definite pH to assure proper take-up of the tanning materials. Accordingly, it is a very delicate operation, with one step taken at a time and all processes scientifically controlled.

It is stated that the result is a long-lasting leather which will not glaze, but will continually hold the necessary rubbing nap until the apron has run its normal life. This factor makes for a more perfect yarn. The Finisham leather will also retain its original characteristics after immersion of 3-min. in water at 212° F. and will not revert to hard stock and glue. The aprons are put together with waterproof cement so that there is no need of double stitching and there is no danger of the seams (or laps) opening up from the action of the high humidity in French drawing rooms. Also, the danger is eliminated that moisture will be absorbed by the apron and cause swelling, which in turn will cause high spots resulting in not enough twist in the yarn and low spots causing too much twist in the material being processed.

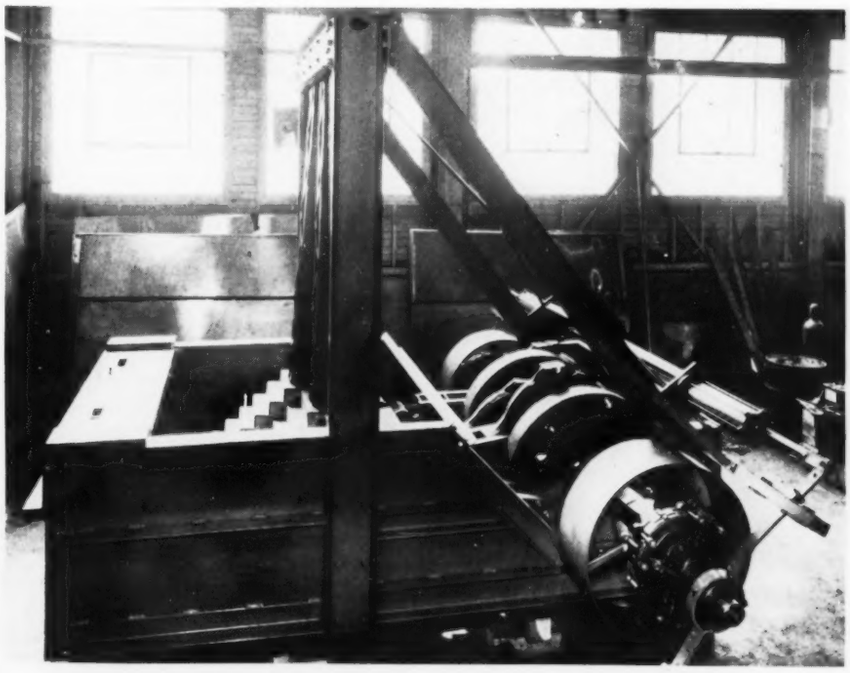
Freezing of Electrical and Steam Equipment

Used electric generating equipment and used steam boilers were frozen April 11, by order of the WPB. This action was taken to promote efficient use of such equipment in the war effort. Dealers in such equipment have been notified that they may not sell, lease, or option used electrical generating equipment or used steam boilers without specific authorization from the Director of Industry Operations. The order also extends the prohibition to cover all persons with such equipment in their possession. However, equipment which has an actual or market value of less than $1,000 per unit is exempt from the terms of the order.

Improved Belt Conveyor Idlers

Belt conveyor idlers embodying several improvements have been developed by the Industrial Division, Continental Gin Co., Birmingham, Ala. All new CGC idlers, regardless of type, have these improved features. Idler rolls of all types are easily removed from supporting brackets by simply lifting them out, and this can be done with the conveyor in operation. All rolls are made in 4-, 5-, and 6-in. diameters of either cast-iron or steel, to suit conditions, and are equipped with anti-friction bearings.

Grease seals are all-metal labyrinth type having five passes, with the inner members protected from damage by a malleable iron nut. These seals will keep both dirt and water from getting



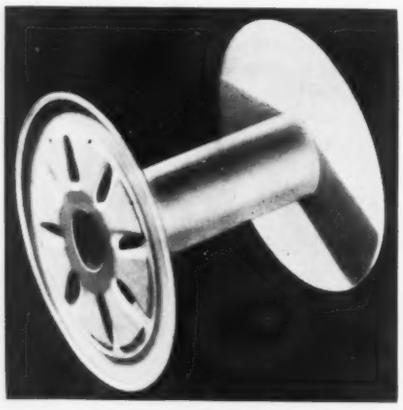
THIS EXCEPTIONALLY HEAVY PUSHER MILL was built recently for a well-known felt company by Riggs & Lombard, Lowell, Mass. It is a four-hammer, single-toe mill with eccentric drive through pneumatically operated clutches and requires about 75 h.p. It is made of structural steel and cast iron. Tub is lined with stainless steel. Hammers are welded and rubber covered.

into the bearings and the malleable nut serves three purposes: (1) Right and left-hand threads make possible minute adjustment of bearings. (2) Sloping surfaces of the nut shed dirt or material being conveyed, preventing it from entering bearings. (3) Recessed groove in nuts fits down over sloping brackets, giving a fine support to rolls as well as tying brackets together.

The supporting brackets are made of high grade malleable iron and are amply ribbed for strength with upper ends of the brackets made in the form of an inverted V to shed dirt. Brackets are jig welded to an inverted angle base or to channel bases as may be desired. This construction gives a one-piece unit in a simple rigid design. Idlers are available in different sizes and types for every belt conveyor application.

Sectional Warp Beams

Electro-welded steel sectional warp beams for tricot knitting are now being offered by the Hubbard Spool Co., 1626 West Carroll Avenue, Chicago. It is stated that these new beams have been designed with sufficient strength and rigidity to stand up under the most severe tricot knitting operations and to assure smooth and efficient performance of the machines. Weight is held to a minimum without sacrifice of strength by the electro-welding of all parts.



Sectional warp beams (Hubbard)

System of Spinning Long-Staple Fibers

For spinning rayon, Aralac, and natural fibers of staples ranging from 2 to 8 in. on converted cotton spinning equipment a newly developed system is being employed with success by some Canadian mills, it is stated by the Textile Development & Consulting Co., 915 Royal Bank Bldg., Montreal, Canada, which holds the patent rights.

This system of spinning is capable of handling 100% viscose staple, blends of wool and rayon, acetate and Aralac, and worsted yarns of wool in grades from 44s to 70s. Wool yarns may be spun from combed tops or carded slivers, or from a blend of combed and carded slivers.

The opening and preparatory processes, as applied in preparing worsted yarn, are retained through gilling and combing, with the exception that a special card is employed. Then, if desired, carded sliver may be substituted in place of combed sliver in the drawing and spinning processes that utilize converted cotton equipment.

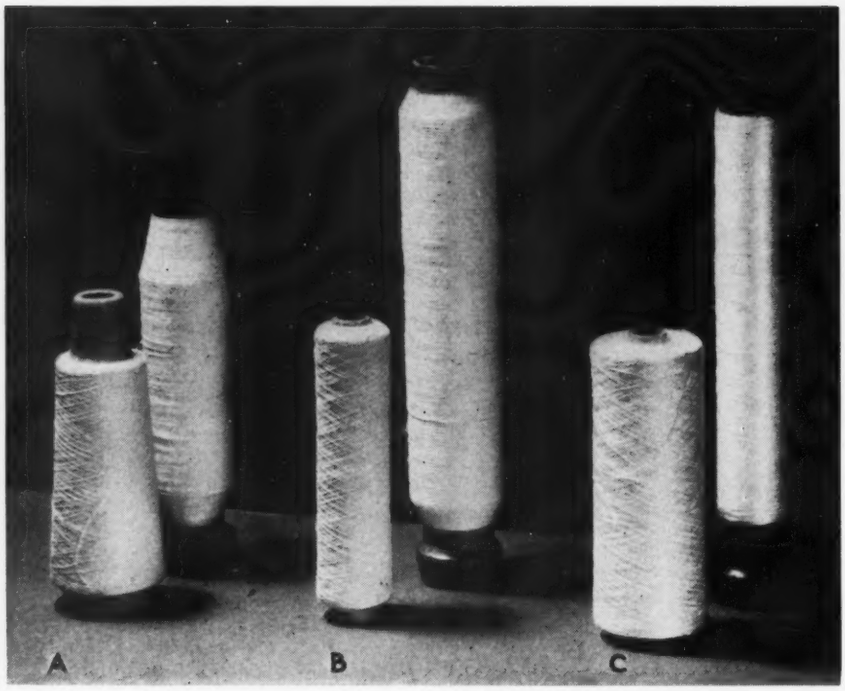
Carding is conducted on special one-cylinder roller cards with metallic clothing, except the workers which are covered with wire clothing. The sliver is then gilled and sent to the combing room or directly to the spinning room depending on the type of yarn desired.

Drawing is the same for both combed and uncombed slivers, cotton drawing frames being employed, with special attachments applied to permit the handling of long staples. The normal cotton fly-frame processes are then used, such as the slubber, intermediates, and finally the cotton spinning frame. However, in each of these processes special attachments must be employed so as to permit the drawing rolls to draft the long-staple fiber.

Lower twist multipliers than usual are employed, the resulting decrease in yarn twist permitting increased production. By employing numerous cotton-processing operations on equipment that has been adapted for this system, it is reported that several processing operations normally required in manufacturing worsted yarns may be eliminated.

The spun rayon yarns manufactured on this system, especially those of 100% staple, are usually carded and not combed.

Samples of yarns spun on this system are illustrated, Group *A* showing a 64s grade wool roving and a 36s worsted single yarn spun from this roving. Samples in Group *B* illustrate a blend of 50% staple rayon, 4 in. staple, and 50% coarse wool in 48s grade with an average fiber length of 6½ in.; this roving is spun into 16s worsted singles yarn as shown. These samples are of combed material. The samples illustrated in Group *C* are of carded and gilled 4-in. staple rayon; the roving is spun and twisted into an 18/2 worsted type yarn.



Samples of roving and yarn produced on new system (Textile D. & C. Co.)

Air Permeability Instrument

Development of an improved instrument for measuring the air permeability of fabrics, which permits a determination to be made of any part of a piece of cloth without cutting, has been announced by the national Bu-

reau of Standards, Washington, D. C. The instrument is recommended for testing parachute cloth, fabrics for wind-resistant clothing, etc. An orifice over which the fabric to be tested is mounted in the top of a table. A beveled ring is placed over the fabric to hold it across the orifice in a smooth condition and with a slight tension in all directions. A clamp for holding the fabric against the orifice is pivoted in its supporting frame so that it will press uniformly against the upper surface of the orifice. The frame is hinged at the back of the table and locks at the front. It can be raised to permit cloth to be drawn from a bolt across the orifice.

The speed of a motor which draws air through the fabric under test is adjusted by two rheostats—one of high resistance to obtain rapid changes in speed, and one of low resistance for fine adjustment.

The amount of air flowing through a fabric under test is determined from the pressure drop indicated by the vertical manometer and the calibration of the orifice which is used. A set of nine orifices covers the range of air permeability from 1 to 700 cu. ft. per min. per sq. ft. of fabric.

It is stated that an instrument of this type is of great assistance in speeding the testing of fabrics intended for defense use which contain strict porosity specifications.

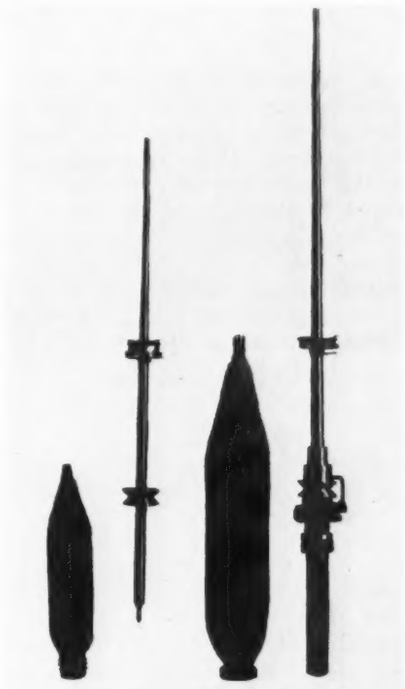
Air permeability tester (Nat. Bur. of Standards)

Ball-Bearing Spindle for Woolen Mules

A new ball-bearing spindle for woolen mules has been announced by Acme Ball-Bearing Spindle Corp., Franklin, N. H. An ingenious design of spindle and base is reported to enable the spindle to find its own gyratory axis regardless of unbalanced bobbins. This in turn is said to result in an even, vibration-free operation and to permit a 25% increase in speed. Old mules can be converted to large package by application of these spindles in a staggered arrangement.

The reduction in vibration is the result of two factors. First, the ball bearing itself is located within the whorl at just the point where the band passes around it. Second, the bolster or lowest support for the spindle is free to move in the bath of oil at the bottom of the spindle-base well, the oil providing a cushioning effect. Because of this design, the band tension exerts no opposing force to the gyratory axis of the spindle, the ball bearing acts as a fulcruming point, and the flexible bolster accommodates itself to any lack of balance in the rotating parts above. In mill tests the spindles are said to have been run successfully without vibration up to 4,500 r.p.m. On laboratory tests spindles operated independently of the mule are reported to have run well with unbalanced loads at speeds exceeding 10,000 r.p.m.

Centrifugal force lifts the oil up the conical shape of the lower portion of the spindle blade until it reaches the bearings. After lubricating the balls, the oil makes it way to the elongated outer race of the bearing and flows by its own weight back to the well. Thus, no oil is spilled or thrown out of the spindle assembly; an extremely light oil can be used; and on two-shift operation oiling is required only twice a year.



Large-package ball-bearing spindle compared with ordinary woolen mule spindle (Acme).

In a mill test on the large-package spindles, it is stated that the weight of yarn per package was increased from 1.34 oz. to 7.76 oz., a gain of 5.79 times, which results in a corresponding increase in the interval between doffs.

Useful Accessories for Textile Mills

"RF" fluorescent lighting (rectified fluorescent) of improved design has been announced by Benjamin Electric Mfg. Co., Des Plaines, Ill. It is stated that this new unit gives more light for the power consumed, effectively minimizes flicker and stroboscopic effect without the need for special balancing devices in the circuit, and eliminates the necessity of separate starters.

Infra-red insulated-reflective panels

are manufactured by Infra-Red, Cleveland, O. These units are available in standard size lengths varying from 17 in. for three lamps to 51 in. for twelve lamps. Single panels may be installed or removed quickly. Then, some panels are so constructed that the entire panel reflects the heat rays from the lamps, while other panels are available with openings for the lamps and insulated with Fiberglas. Solid section panels are available to reflect all heat rays and are suitable for forming the angle, top, bottom, or end sections of baking or drying units.

An improved plastic cork coating, called NoDrip, that stops dripping from condensation or sweating pipes, walls, ceilings, tanks, etc. has been announced by the J. W. Mortell Company, Kankakee, Ill. NoDrip is spread ¼ in. thick over any metal, concrete, brick, plaster, tile, wood, composition, galvanized or painted surfaces, corners, angles or corrugated ceilings and after hardening it can be painted any color.

Blackout bulb specifications are announced by the Wabash Appliance Corp., Brooklyn, N. Y. Changes are based on the results of tests, as well as on various official recommendations. The most important specification change is in color of light from blue and red to the deep orange recommended by the Office of Civilian Defense. Other changes are in size which is smaller, in reduced current consumption to 15 watts, in elimination of the former built-in reflector, and in the improved type of heavy black silicate coating to prevent light leakage.

Blackout relays of non-explosive construction for use around gas mains has been developed by Durakool, Inc., Elkhart, Ind. Free from all outside influences because of all-metal construction and permanently sealed under hydrogen at high pressure, this relay quenches arcing, thereby preventing explosions.

Protection against heat or excessive current, or both, is said to be provided by a new control device for arc-welding machines announced by Lincoln Electric Co., 12818 Coit Rd., Cleveland. It is said that a welding machine equipped with this new device, which provides protection against burn-out, can be operated at maximum capacity for long periods without harm.

Static-discharging and oil-resistant V-belts were introduced by the B. F. Goodrich Co., Akron, O. These lines are now being carried in stock in all popular sizes of A, B and C cross-sections. Previously the belts had been made only on special orders. The static-discharging V-belt accomplishes its function through the use of a rubber in the belt covers which is so compounded as to actually conduct electricity. Static charges are not built up because the electricity flows continuously through the belt to the sheave and out through the frame of the machine. When the machine is grounded, no possibility of sparking is present.

New Dyes and Chemicals

Softening Agent

Development of a new synthetic softening agent of the saturated hydrocarbon sulphonate type is announced by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. The new material, known as Avitone, closely duplicates the finishes obtained from natural fats. It is suitable for back-starching, back-filling, and mangle and quetsch finishing, and can be used as a pure finish, or combined with starches and gums. Among the advantages cited for the new softening agent are low alkalinity, high stability, and the fact that it does not turn yellow or become rancid during storage of finished fabrics.

General Dyes

General Dyestuff Corp. announces the following new products: Para Red Brown R, a direct dye which produces two attractive shades of reddish brown when coupled with Nitrazol CF Conc. or Nitrazol GG; dyeings possess good fastness to washing and very good fastness to water and perspiration; Para Red Brown R can be discharged with Decroline Soluble Conc. D.

Indanthren Scarlet BBN Suprafix, a vat dye specially adapted for printing; it is supplied in the form of a smooth, grit-free, non-settling paste; which produces bright shades of scarlet possessing very good fastness to washing, chlorine, and light.

Single-Stage Process for Bleaching and Scouring

A single-stage process for bleaching and scouring yarns in stainless-steel package machines, which forms a new application of Textone, was described by E. G. Fenrich, of the Mathieson Alkali Works, Inc., at a meeting on April 10 of the Philadelphia Section of the American Association of Textile Chemists & Colorists. For a package machine having a capacity of 450 gal., the following solution is used, according to Mr. Fenrich: 1⅓ lb. synthetic detergent, 4 lb. Textone, 16 lb. tetrasodium pyrophosphate, and 8⅓ lb. available chlorine as sodium hypochlorite.

All the chemicals except the sodium hypochlorite are dissolved and circulated for 5 min. at a temperature of from 95° to 100° F. The hypochlorite is then added, and the circulation is continued at the same temperature for 45 min. Then the temperature is raised to 200° F., and circulation is continued for another 45 min. Bleaching occurs during the first part of the operation; scouring continues as the temperature is raised and the chlorine content of the bath is gradually depleted. After this treatment, the yarn is washed in hot water at 180° F. for 5 min. and again in water at 150° F. for 5 min.

Mr. Fenrich said the use of Textone to activate hypochlorite substantially reduces the total amount of chlorine consumed in bleaching.

Wool Processing Oil

For use in processing wool a blend of equal proportions by volume of refined mineral oil and lard (or grease) oil is recommended by the National Association of Wool Manufacturers to replace olive oil or the mineral-coconut oil previously recommended. Specifications for the two types of oil in the newly recommended blend are as follows:

Refined Mineral Oil (Specification P-1)

Flash Point.....400° F. Min.
Viscosity at 100° F.,
190-210 Saybolt Secs.
Pour.....30° F. Max.
Color N.P.A.....2½ Max.
Neutralization No.....0.10 Max.
Saponification No..... .2 Max.
Evaporation Loss..... .25 Max.
Light Stability—There shall be no more than a barely perceptible change in color when worsted cloth containing 10% ±1 of the mineral oil is exposed for 20 hours in the fade-ometer.

Lard Oil—Now known as Grease Oil (Specification L-1)

Grade.....Extra Winter Strained
Free Fatty Acid.....2-4%
Cold Test.....40-45° F.
Specific Gravity.....912-.919
Saponification Value.....193-198
Iodine Number.....65-76
Unsaponifiable Matter...1% Maximum
Color N.P.A.....2 Maximum

New Publications

Job Enthusiasm

HOW TO CREATE JOB ENTHUSIASM, by Carl Heyel; McGraw-Hill Book Co., Inc., New York; $2.00.

The most important element in industrial outlook today is production efficiency, and in direct ratio to that element is the matter of job enthusiasm. No worker who has low or no enthusiasm for his particular cog-in-the-wheel job can do his part toward stepping up production without putting the right spirit into the work.

"How to Create Job Enthusiasm" is a particularly fine book for use under today's production pressure. It is written in a novel way; the general over-all discussion is presented and then the author, in indented paragraphs, inserts personal observations, examples, etc., to carry his point further. He covers the major issues in maintaining employee morale, and illustrates the various chapters with reprints of posters, charts, etc., which have been successfully used by certain companies whose case histories were given.

The most important thing about this book, however, is its timeliness today, plus its fundamental soundness for later on when we shall lack the patriotic zeal which augments work in war times. Mr. Heyel shows the way to building better industrial relations now which can be drawn upon in the future to good advantage.

"How to Create Job Enthusiasm" is a good book which should be read by every person who has the job of getting others to do their jobs quickly, happily, and well.

The Story of Du Pont

DU PONT—ONE HUNDRED AND FORTY YEARS; William S. Dutton; Charles Scribner's Sons, New York. $3.

The Du Pont industries have moved far afield since the establishment in 1802 of a small gunpowder factory on the banks of Brandywine Creek, near Wilmington, Del. This book is a biography of a business—the inside story of the company's development. For the first 100 years Du Pont was a manufacturer of explosives. During the last 40 years the interests of the Du Pont company and of the textile industry have become increasingly interlaced. It was in 1910 that Du Pont purchased the Fabrikoid Co., and entered into production of waterproof cloth. Six years later it acquired the Fairfield Rubber Co., maker of rubber-coated fabrics. In 1917 Du Pont started to manufacture dyes and other organic chemicals; in 1920 the company began production of viscose rayon; in 1928, acetate rayon. The book is rich in personalities, teeming with anecdotes. Textile men will find it a truly exciting story of American ingenuity and ability.

A "Must" Book on the South

BELOW THE POTOMAC, by Virginius Dabney; D. Appleton-Century Co.; New York; $3.00.

Among the hundreds of books written in recent years about the South "Below the Potomac" certainly deserves top ranking. It is an honest, careful, and yet sympathetic study of the South in all its phases of living. It covers southern economics, educational facilities, the negro question, and politics in a thoroughly exploratory manner. In all discussions the author shows the result of exhaustive reading of contemporary works on the South, of voluminous correspondence with southern leaders, of sufficient travel to know his country from the inside out.

The book is the result of careful sifting of constructive thought over a period of years, and a new type of reconstruction could be based upon the evidence presented. Wherever Mr. Dabney finds and discusses an unfortunate situation, or series of situations, reflecting upon the South's standing, he also offers a remedy which could be applied.

After he had pointed out in previous chapters the existing faults of the section, he outlines in the final chapter some of the forces already in motion which could, with proper encouragement and authority, create a new South for the future.

Every southerner should certainly read this eye-opener about his native land. Every northerner should be willing to take this study at face value. To those in the textile industry, both South and North, this book should be particularly appealing, since much of the South's past and future hinges upon the way this industry's own problems apply to those Below the Potomac.

A History of Cloth Making

MAN IS A WEAVER, by Elizabeth Chesley Baity; The Viking Press, New York; $2.50

"As long as man is capable of invention and change, the story of textiles will never be entirely told" but "Man Is a Weaver" traces the romance and adventure of cloth making from the Stone Age to Pearl Harbor. Written for the student, particularly those of teen age, it tells the story of cloth and of the people who spun, wove and dyed it; who traded and fought for it; and who passed its secrets from father to son, city to city, and from old worlds to new.

In this exciting motivated history, Mrs. Baity has carefully included much description and legend to give the book a colorful "fireside" picture of how early peoples lived and later inventors invented. Also, she overlooks numerous technicalities which might have cluttered up her tableau. Teachers will welcome the organization of the book and its excellent illustrations.

The final chapters cannot fail to pique the curiosity of today's sons and daughters of textile men, for in them is pointed out the fascinating yet-to-be-opened doors that lead to the comfort and clothing of the peoples of the world to come.

News of Suppliers

David Gessner Co., Worcester, Mass., has named Henry Dufries, long chief engineer, as assistant general manager of the firm. Mr. Dufries will continue his duties as chief engineer as well. Leo Hippert has been promoted to assistant superintendent in charge of all war work.

Crompton & Knowles Loom Works, Worcester, Mass., has elected Albert W. Muir, who has been in the employ of the company since 1905, as assistant treasurer to succeed George W. Burgess, retired. Other company officers were reelected.

Mathieson Alkali Works, New York, plans immediate erection of a plant that will substantially increase the supply of ammonia and its derivatives. The new plant will be financed by the Defense Plant Corp. and will be erected and operated under lease by the Mathieson organization.

United States Rubber Co., New York, has added a department to handle sales of rayon in the Central and South American markets. The move took place because of the simultaneous sharp curtailment of the export of manufactured rubber goods and the need for

RELIANCE ELECTRIC & ENGINEERING CO. receives Navy E Pennant—With appropriate ceremonies the Navy "E" Pennant was hoisted at the plant of Reliance Electric & Engineering Co., Cleveland, Ohio, on Mar. 24 following presentation by Rear Admiral William C. Watts, U.S.N. (ret.) The pennant was accepted by Clarence L. Collens, president of the company.

an already established organization in Latin America to handle distribution of rayon allocated there. John D. Clarke, as director of sales for U. S. Rubber Export Co., Ltd., will direct activities with August W. Kops as rayon sales manager. Mr. Kops is president of the Textile Salesmen's Association and has been for many years associated with the textile industry.

Metallizing Co. of America, Chicago, has removed its general offices and midwestern warehouses to new and larger quarters at 1330 West Congress St.

Draper Corp., Hopedale, Mass., has elected B. H. Bristow Draper, Jr., as treasurer succeeding the late G. Russell Goff. Mr. Draper is son of the president of the corporation and for several years has been assistant treasurer and director of purchases.

Napthole, Inc., New York, heretofore a subsidiary of E. F. Drew & Co., Inc., has been merged with that company and its business is being conducted as a division of E. F. Drew & Co., Inc.

General Aniline & Film Corp., New York, has appointed Joseph S. Bates as vice-president in charge of production for General Aniline division of the company. Mr. Bates has been identified with the chemical industry for the last 25 years. In 1924 he established the Bates Chemical Co., Philadelphia, of which he is president and treasurer. Since last October, until accepting the present appointment, Mr. Bates has been chief of the Coal Tar and Intermediate Section of the Chemical Branch of WPB.

Quaker Chemical Products Corp., Conshohocken, Pa., has added Allan d'Apery Mills to its laboratory staff in the capacity of organic research chemist. Mr. Mills was previously with Rohm & Haas Co. for five years. J. Perzanoswki has also joined the organization as an organic chemist. He was formerly with the laboratories of United Gas Improvement Co. Quaker Chemical has recently hit 100% in the payroll allotment plan for purchase of war bonds.

Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has appointed B. W. Clark, vice-president in charge of the merchandising division, as vice-president in charge of sales of the company. He succeeds Ralph Kelly, who resigned to become executive vice-president of the Baldwin Locomotive Works. Westinghouse has organized a new maintenance sales department to help keep 7,000,000 Westinghouse motors and generators running full time in the nation's industrial plants and power houses. Harry R. Meyer has been appointed sales manager of this department, which will coordinate the sale of renewal parts and repairs. John H. Ashbaugh, manager of manufacturing and engineering of Westinghouse company's merchandising division since November, 1941, has been appointed manager of that division with headquarters in Mansfield, Ohio.

WALLACE K. BROWN, who has been appointed vice-president in charge of procurement for Crocker-Wheeler Electric Mfg. Co., Ampere, N. J. He has been with the organization since 1908.

J. F. LINCOLN, (left) president of Lincoln Electric Co., Cleveland, Ohio, receiving a letter of appreciation from the Office of Chief of Ordnance, Washington, for cooperation of the Lincoln School of Arc Welding in providing welding instruction for ordnance inspectors. Capt. H. M. Reid (right), of Cleveland Ordnance District is presenting the letter.

Foster Machine Co., Westfield, Mass., has appointed Edward Connor as sales manager, effective June 1. He succeeds Webb Durham who resigned to join Burlington Mills Corp., Greensboro, N. C. Mr. Connor has been in charge of Foster's Charlotte office. He is the son of T. E. Connor, for many years sales manager and now vice-president of the company.

General Electric Co., Schenectady, N. Y., has paid out more than $31,000,000 in pensions and life-retirement allowances since 1912, according to statement by Charles E. Wilson, president of the company, on the recently-celebrated 30th anniversary of the pension system founded by the late Charles A. Coffin, first president of General Electric. The company reports orders received during the first quarter of 1942 to be $299,120,000 compared with $257,382,000 for the corresponding period of 1941.

Monsanto Chemical Co., St. Louis, Mo., has elected Osborne Bezanson, general manager of the company's Texas Division, to be a vice-president of the company.

Raybestos-Manhattan, Inc., New York, recently elected J. H. Matthews and O. H. Cilley to the board of directors. Mr. Matthews is assistant general manager of Manhattan Rubber Mfg. Division, Passaic, N. J., and Mr. Cilley is assistant general manager of the United States Asbestos Division, Man-

Teamwork—

AN AMERICAN TRAIT

Getting together to solve their problems is characteristic of American businessmen . . . Teamwork is a heritage of these United States.

SONOCO recently demonstrated this when faced with the problems of increasing their production of vital paper carriers to the textile industry. By simple oral agreements between customers and ourselves, we eliminated a bottleneck in manufacturing that has increased our production 10-15%, giving us a safe margin over current demands. Teamwork like this will spell *V-I-C-T-O-R-Y*—sooner.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY

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PAPER CARRIERS

GENERAL ELECTRIC CO., Schenectady, N. Y., has produced an educational movie entitled "The Inside of Arc Welding." The first part is now available. Five other parts will be available in June. The company hopes to get these films used as widely and as quickly as possible to aid in the training of welders for war industries.

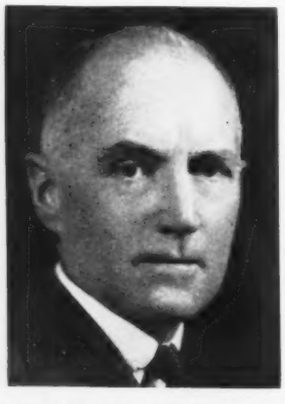
heim, Pa. Sumner Simpson, president of Raybestos-Manhattan, Inc., has been named to the War Committee of the National Association of Manufacturers.

Wickwire Spencer Steel Co., New York, has just mailed to all its employees, stockholders, customers, and suppliers a 24-page illustrated booklet, "Something About Our Job in Helping to Win the War." The primary purpose of the booklet is to inform the company's employees how the products they turn out are actually used for war purposes. A secondary purpose is to post its stockholders, customers, and suppliers on the company's contribution to the war effort.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has just issued a brochure, "We Work for Victory and We Plan For Peace." The brochure shows what products the company is making under wartime conditions and how these products are helping to produce the guns, tanks, planes, and ships needed to further the war effort. Allis-Chalmers also has announced the early release of a sound moving picture of the same name and theme.

Goulds Pumps, Inc., Seneca Falls, N. Y., has established a Washington, D. C., office with J. B. Darden in charge, located at 505 Colorado Bldg., 14th and G Sts.

B. F. Goodrich Co., Akron, Ohio, which annually receives millions of cylindrical paper spools carrying cotton yarn from its textile mill in Silvertown, Ga., is now returning these spools to the mill for re-use. In further line with conservation, the company has set up a special department for renovating cartons, which have been used but which are capable of re-use.



JAMES F. TOWERS, who has been elected president of Ford, Bacon & Davis, Inc., engineers, New York, succeeding William von Phul, who had been president since 1922 and who now becomes chairman of the executive committee.

Stewart-Warner Corp., Chicago, has elected Frank A. Hiter, vice-president and general sales manager of the company, as a director, replacing Thomas T. Sullivan, retired.

National Industrial Advertisers Association, Chicago, Ill., has elected Atlantic City for the association's 20th annual conference. This will be held in the Hotel Traymore next September.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed Ralph R. Newquist as assistant to Walter Geist, vice-president. Mr. Newquist was manager of Allis-Chalmers' district office at Houston, Texas. C. W. Schweers succeeds him there.

RALPH R. NEWQUIST, now assistant to the vice-president of Allis-Chalmers Mfg. Co.

Manning, Maxwell & Moore, Bridgeport, Conn., have appointed Fred Crabbe as their Dallas, Texas, representative, succeeding Alfred Kent who has joined the U. S. Navy and is on active duty at the Charleston (S.C.) Navy Yard.

Ketterlinus Lithographic Mfg. Co., Philadelphia, celebrates its hundredth anniversary this year. The business was started in 1842 by Eugene Ketterlinus at Fourth and Arch Streets, Philadelphia, and was carried on by his son, J. Louis Ketterlinus and Walter Clothier, successive presidents during the period from 1876 to 1933, and since 1933 by Harrison K. Caner, Jr. The original small building has been replaced by a modern eight-story plant.

American-Marietta Co., Chicago, has appointed Charles P. Gilikson, former factory representative at Minneapolis, to be assistant to Roland G. Maus, sales manager.

H. B. HIGGINS, who has been associated with the Pittsburgh Plate Glass Co. since 1905, and was recently elected executive vice-president of the company.

American Viscose Corp., New York, has appointed Charles W. Rice, Jr., for the last two years with J. M. Mathes, Inc., as associate account executive, to be the corporation's advertising manager. While with Mathes, Mr. Rice was active in connection with the Viscose account, handling both trade and consumer advertising. Previously he was account representative with Batten, Barton, Durstine & Osborn in their Pittsburgh office.

E. I. du Pont de Nemours & Co., Wilmington, Del., has changed the name of the R. & H. Chemicals Department, to the Electrochemicals Department as describing the type of products created by this department without encroaching upon the nine other operating departments of the company.

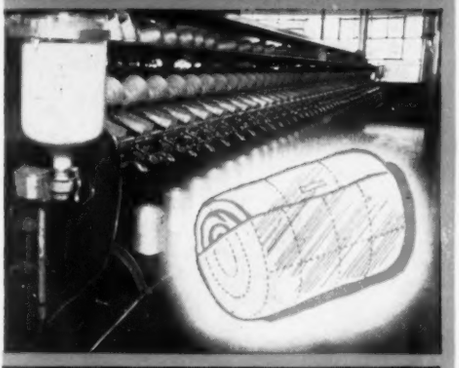
Young Radiator Co., Racine, Wis., has appointed Robert Grant as vice-president in charge of manufacturing.

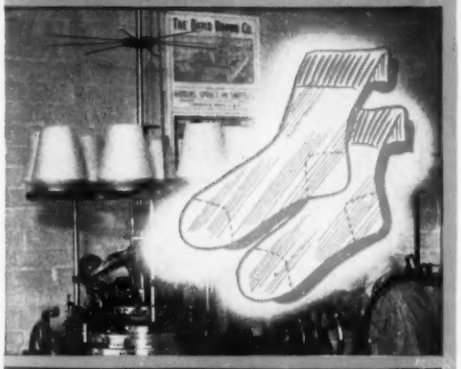
Hercules Powder Co., Wilmington, Del., has established a fellowship, to be known as the Pine Chemicals Fellowship, at Mellon Institute of Industrial Research, Pittsburgh, for the year 1942. Dr. George B. Field, of the Institute, will be the fellow. Purpose of the fellowship will be to develop new uses for rosins, and to emphasize applications to these materials in the war effort.

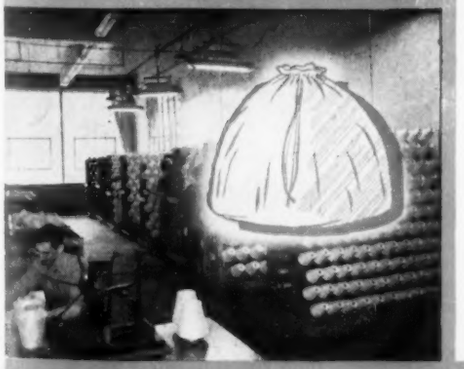
I. Reifsnyder Son & Co., Philadelphia, have admitted Henry P. Orlemann, Jr., and Malcolm R. Longshore to the partnership.

Ford, Bacon & Davis, Inc., engineers, New York, have elected E. S. Coldwell as a director. Mr. Coldwell is also a vice-president of the firm.

Roller-Smith Co., Bethlehem, Pa., has elected Reg Halladay as president to fill the post vacated by J. D. Wood, who is now devoting his entire time to his duties as chief engineer of the company.







WHAT ABOUT

"CONTROLLED MANUFACTURE"

NOW?

Versatile as always, Dixie yarns are being used to serve many of the garment needs of America's armed forces. Wind resistant jackets, covers for sleeping bags, army and navy sox, pouch bags, and many other pieces of equipment are being knit with Dixie yarns. We are operating our plants "all-out" to fulfill our obligations to our customers who are knitting for both military and civil purposes.

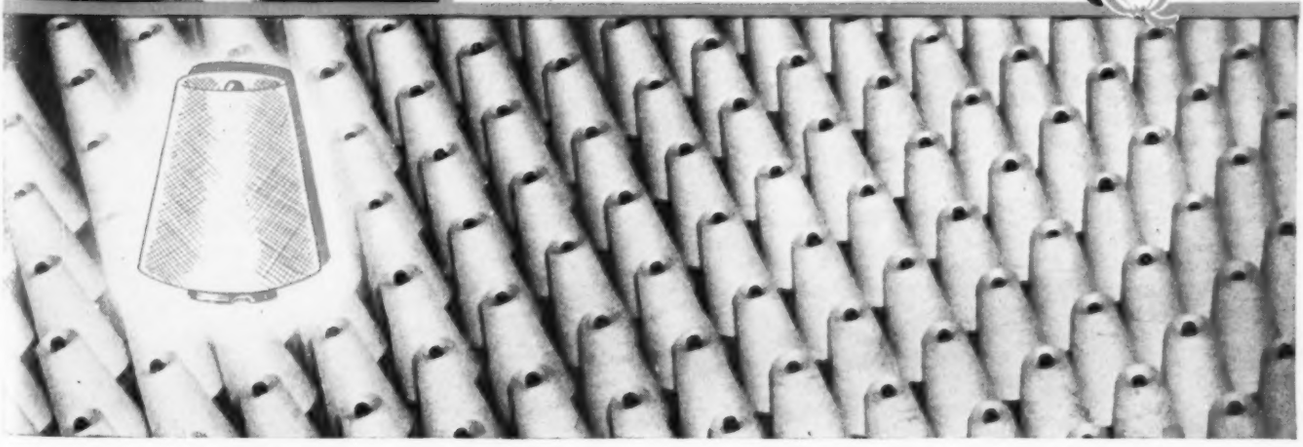
Now, with the pressure of production intensified, Controlled Manufacture continues to be the ruling factor in Dixie's production schedule. In war and in peace you can rely on Dixie for top-quality yarn.

Dixie

MERCERIZING CO., Chattanooga, Tenn.

Dixie Durene . . . A Product of Controlled Manufacture

AMERICAN COTTON MADE IN U-S-A



FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

Government specifications and requirements as well as suggested dyeing formulas meeting these requirements have been issued in bulletin form by the Calco Chemical Division, American Cyanamid Co. Bulletin No. 637 covers the powder-blue vat dyeing of nurses' cotton broadcloth waist material; No. 638 covers the dyeing of dark blue worsted yarn for U. S. Navy Jerseys; No. 643 covers the dyeing of olive drab cotton socks with direct colors.

"Control of package size improves evenness and strength of yarn," is the title of an article contained in the April issue of *The Traveler*, published by Victor Ring Traveler Co.

Sizing and humidity are discussed along with the gelatin shortage and the replacement of other materials in sizing mixtures to take the place of gelatin, in the *Houghton Line* for March and April. This publication is issued by E. F. Houghton & Co.

Paper products for war contracts and their use in factories producing national defense materials are discussed in a bulletin published by Dennison Mfg. Co. Paper masks, colored tags for identifying material in process, and numbered coupon tags are discussed.

Bernacyl colors on Nylon is the title of a booklet issued by Bernard Color & Chemical Corp. It deals extensively with the dyeing of Nylon fabrics and with the various types of dyes that may be used. Temperature, rate of absorption, fastness properties, as well as a list of various dyes suitable for Nylon are covered.

Six pamphlets on the subject of "How to Get the Most Service out of Industrial Rubber Products" have been published by B. F. Goodrich Co. Titles of these pamphlets are as follows: "Transmission Belting," "Conveyor Belts," "V-Belt Drives," "Belt Salvage," "Rubber Hose," "Mats and Matting."

Desizing—Its relation to sizing materials, and hints on how the desizing process should be conducted is the subject of an article contained in the April issue of *Rayon Warp Sizing Specialist*, published by Charles B. Johnson Machine Works.

Cleaning in the spinning room by means of automatic overhead cleaners is the subject of a short article in the *Swirling Column*, March issue, published by the American MonoRail Co.

Direct warping layout for woolen mills, especially those operating on Government orders, is the subject of an article in *Davis & Furber News* published by Davis & Furber Machine Co. for March. Included is a floor plan for a direct warping layout with two reels and two beamers to one creel and dresser unit.

Fluorescent lighting accessories as offered by General Electric Co., Appliance and Merchandise Dept., are described in a folder issued by this company. Such accessories as starters, lampholders, and other material accessories are discussed.

Vari-pitch Texrope sheaves and their applications to the textile industry are described in a new bulletin issued by Allis-Chalmers Mfg. Co. Another bulletin of textile interest published by the same company, is entitled "Electrifugal and 'SSU'nit Pumps."

Looking in on Honest Weight is the title of a new booklet published by the Toledo Scale Co. A brief sketch of the use of weight since ancient times and a pictorial survey of the human and mechanical resources back of the making of a modern precision scale is covered.

Two-stage centrifugal pumps is the subject of a new bulletin published by Ingersoll-Rand Co. This bulletin contains photographs and cross-sectional views of the pumps along with tables covering performance, friction of water in various sizes of pipes, etc.

Counting, timing and recording devices are covered in a new 50-page catalog issued by the Production Instrument Co. Information concerning mechanical and electrical counters, actuating switches for electric counters, together with numerous applications of photo-electric counting, signalgraph automatic timing and recording devices is contained.

Titanox treatment in present-day industry, including the properties of these pigments and their application to the textile industry, is described in a booklet published by Titanium Pigment Corp.

A review entitled "How Worthington Serves Industry," issued by Worthington Pump & Machinery Corp., is of interest because of a section on Worthington equipment for the textile industry.

An industrial roof ventilator catalog file is offered by the Swartwout Co., containing a bulletin illustrating and describing the Swartwout line of roof ventilators with a guide for estimating building ventilation and roof ventilator requirements.

Leather belt conservation is covered in an illustrated booklet issued by E. F. Houghton & Co., entitled "How to Make Your Belts Last Longer." Many concrete suggestions for prevention of wear, power transmission cost reduction and down-time curtailment are given.

An instrument selector chart has been issued by Westinghouse Electric & Mfg. Co. Also issued by the same company is a leaflet which describes manual auto starters for low voltage starting of non-reversing, squirrel-cage, 2- and 3-phase, 5 to 200-hp. induction motors. Another booklet describes air conditioning systems. Motor drive, gearing and control for industrial, and commercial air-conditioning systems are described.

Aluminum News-Letter, published by Aluminum Corp. of America for March, contains information concerning the use of aluminum slasher hoods as a method of preventing stains on yarns.

Cotton duck products may be waterproofed, made flame-resistant, and mildewproof by means of petroleum products such as waxes, oils, and the like, as described in an article in the April issue of *Oilways* published by Standard Oil Co. of N. J., Standard Oil Co. of Pa., Standard Oil Co. of La.

Oil burners of different types suitable for industrial installations are discussed in Bulletin No. 108 issued by Peabody Engineering Corp.

Anemostat, a high-velocity air-diffuser is described and numerous applications illustrated in a folder published by Anemostat Corp. of America.

Oil-retaining bearings, approved methods of installation and adaptation of this type of bearing to molded rubber, plastics and die castings is covered in detail in a booklet titled "Oil Compo-Retaining Bearings" published by Bound Brook Oil-Less Bearing Co.

Flow indicators are described in a booklet by S. F. Bowser & Co. One of the outstanding advantages of the flow indicator described is that the liquid flowing through the meter is visible.

We must save rubber is the title of an 11x17½-in. wall poster offered by B. F. Goodrich Co. This poster has eight subheadings as to ways and means of conserving rubber.

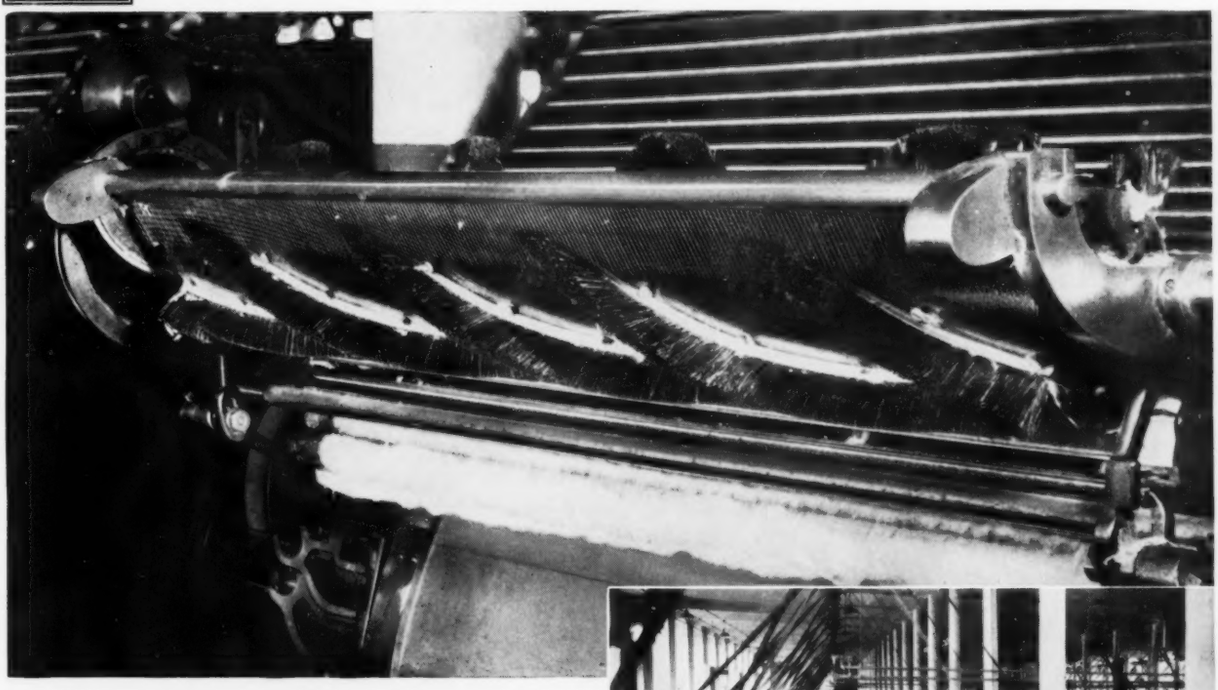
Wire nuts for joining electrical wires is the subject of a booklet published by Ideal Commutator Dresser Co. Pliers for stripping the insulation from electrical wires and other electrical equipment are also described.

Industrial applications of Reeves speed control are described in a two-page folder issued by Reeves Pulley Co.

Dyeing of cotton and rayon to be rubberized is described in *Dyestuffs* for March, published by National Aniline Division, Allied Chemical & Dye Corp. The article deals with the manner of copper determination and lists recommended dyes for cotton and rayon to be rubberized. Also contained in the same issue is an article on ramie.

FULLERGRIPT BRUSHES

as applied to revolving-flat brushes on Cotton Cards

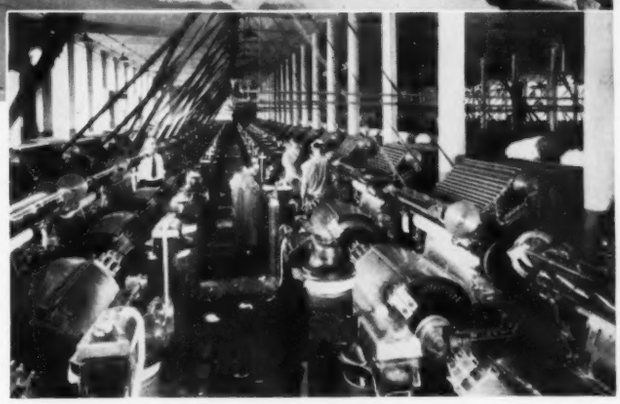


Mr. Carder, Your Own Maintenance Department Can Refill Your Brushes

JUST follow these simple directions:

Remove old brush core. Put it in a lathe. Trim off the old bristles and sand or turn surface to a suitable smoothness. Give it one or two coats of Shellac for hard, smooth surface.

While the core is still in the lathe, mark four evenly spaced spiral lines on the core. Then drill holes for screws and apply the four strips of bristles along the spiral lines. And it's done! Easy, Economical, Efficient.



Over 3000 Cotton Cards Are In Use Today With Fuller Replaceable Brush Strips

THE Fullergript principle, which packs bristles closely together from one end of a spiral to the other, allows no gaps to permit insufficient cleaning of the flat clothing. More thorough cleaning means better carding.

Brush Strips can be replaced quickly even by machine operators, without benefit of skilled mechanics. Both time and money are saved.

Notice the higher tufts at both ends of each strip. These reach the ends of the flats where there is no card clothing and keep them free of dust, oil and cotton wax. The purpose is to prevent formation of those gummy lumps which lift the flats away from the cylinder. Again, better carding.

OTHER TEXTILE-MILL BRUSHES

Yes, indeed, the Fullergript principle has proved successful in other textile-mill applications—thread-dresser brushes, worsted dabbing brushes, burr-picker brushes, finishing-machinery brushes, etc. Write us for details of any of these applications—including the cotton-card brush we have described on this page.

The FULLER BRUSH Company

INDUSTRIAL DIVISION, DEPT. 8C

3594 MAIN STREET - - - HARTFORD, CONN.

THIS IS NO. 33 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

EMPTY BOBBIN CONVEYOR (Roto-Coner*)

Many of the mills operating Roto-Coners* believe that the Empty Bobbin Conveyor is one of the most valuable features, making it easier for the operator to handle the bobbins and improving the cleanliness of the machine. Yet there are some mills which do not realize its many advantages, and we are frequently asked why it is desirable to have a conveyor.

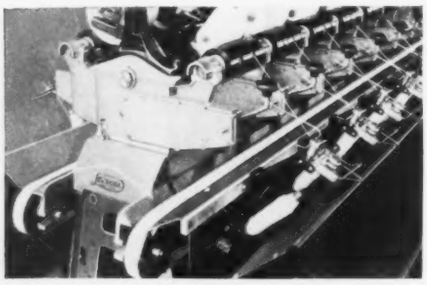


Fig. 1. Empty bobbins removed from the supply spindles are placed on the conveyors and are carried to the end of the machine where they are accumulated in empty bobbin boxes.

Slow-speed machines were not equipped with conveyors, and the empty bobbins were placed in boxes by the operator. It took a long time for the boxes to fill up, and a small quantity of full bobbins was sufficient to supply many spindles.

On the high-speed Roto-Coner*, the bobbins run out very quickly, and a greater amount of storage space is required for full bobbins. For this reason, an Empty Bobbin Conveyor (Fig. 1) was built into the machine, replacing the boxes beneath the supply spindles. This improved the appearance of the machine, increased the production of the operator and made it unnecessary for the collector of empty bobbins to enter the alley where the operator is working.

The operator of the Roto-Coner* has a continuous supply of fresh yarn at her fingertips, since with no boxes needed for empty bobbins, more space has been devoted to carrying a larger supply of fresh yarn. This supply does not have to be replenished so often, and the operator has less interference by the yarn boy distributing full bobbins.

There is one conveyor for each side of the machine, so it is convenient to use bobbins of different types on each side without danger of getting them mixed when removed from the machine.

CONING AND TUBING ON THE ROTO-CONER*

Many mills find that with their changing requirements, they have a need for converting their drum winders from coning to tubing. It is possible to equip one side of the Roto-Coner* for coning and the other side for tubing, but when the complete machine has to be changed over, it is necessary — with the Roto-Coner* as with any drum winder — to change the traversing mechanism as well as the spindles.

On a reciprocating-guide winder, this is done by changing the cams and other parts of the traversing mechanisms. On the Roto-Coner*, it is done by replacing the Rotating Traverses.

Each 20-spindle section has a shaft on each side holding 10 traverses and the ball bearings. This shaft is coupled to other sections to make up the full machine.

By removing the bearing caps and loosening the couplings, it is an easy matter to lift out each section and replace with a new section having the desired Rotating Traverses. (Fig. 2.)

Spare shafts can be stored, out of the way, on a bracket against the wall. The shaft is completely dry — there is no grease to make messy work, no lint accumulation to remove, no cleaning necessary before storage. Furthermore, the shaft is all one piece; there are no cams and small parts, as with a reciprocating-guide machine, to handle, sort and store.

When changing from coning to tubing it will also be necessary to replace the cone holders with spindles for tubing. It will not be necessary to remove the spindle holder arms.

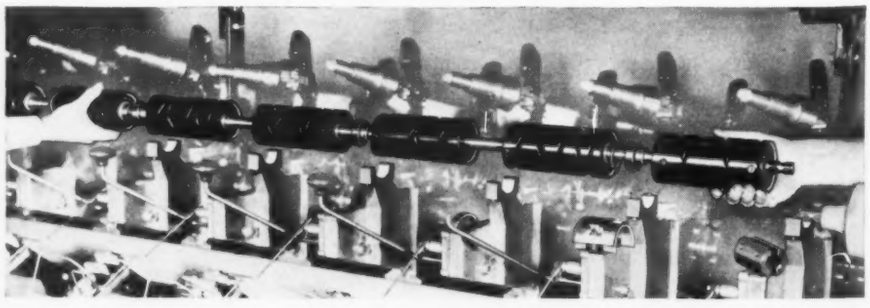


Fig. 2

See our Catalog in TEXTILE YEARBOOK

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U.S. Pat. Off.

THE OVERSEERS' CORNER

WOMEN SUPERVISORS

A PETE AND BILL DISCUSSION

"Look here," exploded Bill, dashing up to Pete in the hall. "Just what are you trying to do, wreck our production?"

"Now calm down, Bill," said Pete evenly. "You'd think someone had given you the 'hot-foot'. Out with it."

"Oh, you know what I mean; this business of making Mabel Parks secondhand in the winder room. She'll run every hand off sure as you're born. It takes a man to handle women."

"Bill," explained Pete, "what are you going to do six months from now for supervisors with so many men going to the Armed Forces or other jobs? Going to double up and try to run short handed?"

"Heck no! How can I? We are doubled up now as it is," squirmed Bill.

"If you had followed things, Bill, you'd know using women as supervisors isn't a new idea. We have been doing it in the cloth room. You can't deny Hazel White has done a fine job there."

"Well," admitted Bill, "but that's different. Inspection isn't like a production job. What about fixers and change men, do you think they'll take orders from a woman?"

"Of course," exclaimed Pete, "and you would too if you weren't such an old tyrant. We are all taking 'orders' from the women everyday and like it! Seriously though, with intelligent training and organization you can fit them for a great many more jobs than we even now realize."

"Look here!", exploded Bill.

"It looks screwy to me, and I'm for giving old Walter Smith that job in the winder room," replied Bill.

"Older men have their place too, but it'll take enthusiasm and drive to get over our new production program. I am expecting the ladies to furnish that too. Besides, wait and see," concluded Pete.

Should women be assigned to supervisory jobs in the mill?

Letters from Readers

Wants a United Front

"Protecting Textile Plants"
Pete & Bill, April, 1942

Editor, Overseers' Corner:

There are more Bill's in the country than one, but all should realize their duty in the present-day crisis with our Liberty, our Democracy ready to be crushed by the enemy. Carelessness at this particular time we should in no wise encourage—no matter where we are, in the plant, at the factory, the shop, as foreman, or employe, as the case may be.

Bill, or all the "other Bills in America" should realize that the time is opportune for thought, coupled with action, lest our Freedom is crushed by the marauding enemy.

Above all let us put patriotism and love of country above everything else. Let both go along hand in hand until we have won a great and lasting victory—a victory that will cause future generations to rise up and call us blessed. There should be no slackers (if Bill is one), but a united front.

BURDINE WEBB.
(Kentucky)

Cannot Be Too Careful

"Protecting Textile Plants"
Pete & Bill, April, 1942

Editor, Overseers' Corner:

In my humble opinion, there is very little danger in any textile mill going too far in setting up protective systems, but, on the other hand, there is a very grave danger that men with Bill's attitude will ignore the danger and fail to take the proper precautionary measures and maybe cause the wrecking of their mill or even the loss of human life itself.

These are critical times and every executive officer or supervisor should make it a part of his business to check on every employee of his plant, no matter how long they may have been employed. If they are loyal, they will not resent it, and, if they are not loyal, the

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing the material on this page or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

quicker they are found out, the better for all concerned.

I am inclined to think that bright lights are one of the best protections that any industrial plant can have, as crooks usually work under cover of darkness.

RAYMOND W. CARR,
(West Virginia)

Job Instructor Service

"Labor Training"
Pete & Bill, March, 1942

Editor, Overseers' Corner:

Depends on the size of Bill's mill whether he is altogether wrong in the ideas Pete jumped on in your March issue. A small mill like ours would be wasting the time of its most useful men, teaching them how to teach. Their assistants must learn from them as they go along, or make way for someone who can.

The new operatives get closer personal supervision than possible in a big plant, and the department head knows pretty quick whether they have what it takes.

Training plans that would be just a nuisance in a small plant, may fit in a big organization—but I wouldn't know about that.

A LITTLE FELLOW
(Pennsylvania)

Overseers' Practical Helps

Encouraging Needle Thrift

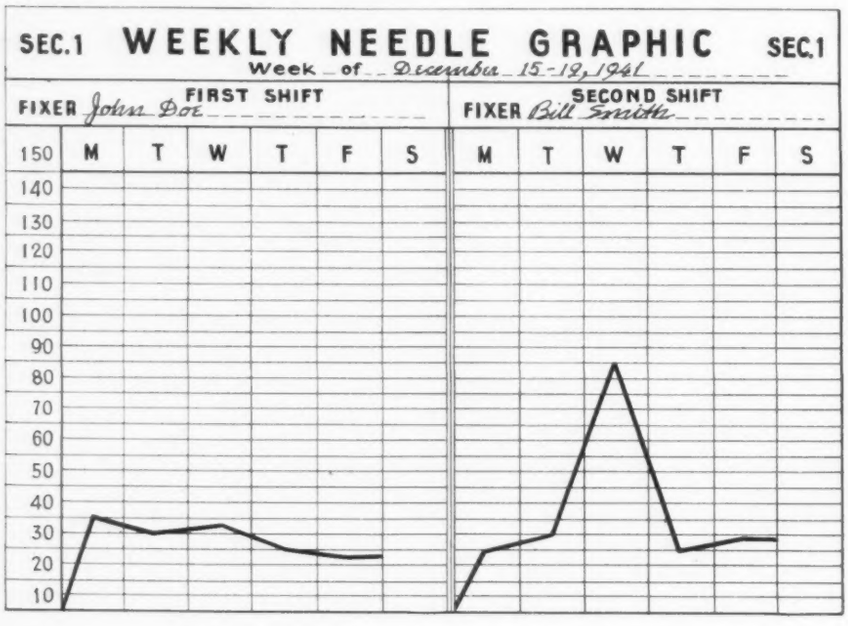
Inasmuch as the latch needles the average circular hosiery machine fixer uses in a day represent more money than he spends for the "pop" he drinks at 10 a.m. and 2 p.m., any scheme that would tend to encourage needle thrift should always be in order, timely, and opportune. Especially at the present time when the steel of which these needles are made is on the Government priority list.

The accompanying sketch shows a blackboard about 24 to 30 in. square to be placed near a section of machines so the fixers on that section can see at a glance just how many needles they have used on each day of the week.

Looking at Section 1, it appears that John Doe on the first shift is a better fixer than Bill Smith on the second shift. Although John used 40 needles on Monday—and it should be remembered that machines always run badly on Monday after standing over the week-end—he got his supply down to 27 on Friday, which is a permissible number. Bill's supply jumped to 90 on Wednesday; evidently there was a smash somewhere on his section. Of course smashes don't occur often, but the chances are they might occur more often if this graphic record did not make them so conspicuous.

It should take the overseer, or whoever has charge of issuing the needles, but a few minutes each day to chalk up the graphic reports, since he gets the figures from his supply record. And to start a new week, all he has to do is erase the chalk line.

J.W.H. *(North Carolina)*



Blackboard graph of needles used

Leather Belt Maintenance

According to J. R. Hopkins, Chicago Belting Co., Chicago, life of leather belts may be prolonged by keeping the belts dressed to prevent their drying out. Dressing should be every three months for ordinary conditions and every month or oftener where air is either dusty or very dry or where the belt is severely overloaded.

Belts should be made endless—if not already endless. Metal fasteners constitute the weakest part in any belt and shortens the belt life.

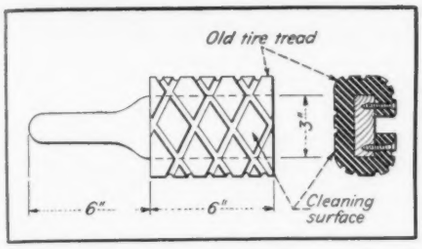
To have a belt-driven machine work properly it must be provided with continuous, dependable power to handle all peak loads, no matter how frequent or how severe. This means the full power of the motor or line shaft must be delivered to the machine by the leather belt and enough belt for this purpose must be provided. If a leather belt gives trouble check the width and thickness of the belt with the tables issued by the Engineering Committee of the American Leather Belting Association.

If short-center leather belt drives do not provide enough power, check the pulley size to determine that it is of sufficient size. The faster a leather belt travels the more power it transmits up to 6,000 ft.p.m. Be certain the motor is mounted on a pivoted base which automatically keeps the belt at the right tension, regardless of changes in load or belt elongation under load.

Belt Cleaner

For cleaning belts, the home-made device illustrated in the accompanying sketch has been recognized by a belt manufacturer as the most effective yet to come to his attention. It is made from a 12-in. length of 1 x 3-in. board with a section of old automobile tire tread wrapped around and securely screwed to one end, and the other end shaped to form a handle. In operation, the cleaning surface is pressed against the inside of a running belt; and the tool does an excellent job of cleaning, it is said.

Of course, with the tire situation as it is, it is doubtful that anyone will cut up a tire that has the slightest bit of



Home-made belt cleaner

surface rubber left. But there probably are some old worn-out tires that have a little rubber left in spots.

Maintenance of Globe Valves

Difficulty in obtaining new equipment under present conditions necessitates better care of equipment to make it last longer.

Frequently steam valves are closed while they are hot and as the parts cool, contraction of the stem and disk causes the disk to lift slightly off its seat, allowing a small amount of steam to leak through. This leakage tends to cut the seat ring surfaces, causing a permanent and increasing leakage. Operators should, after the valve has cooled, give the handwheel another twist to take up the contraction of the internal parts.

Valves may be damaged extensively if improperly assembled. The disk and stem should be checked to make sure they are in the open position before a valve is disassembled. Then, when removing the seat, make sure the proper wrench is used so that the seat is not distorted.

After a valve has been in service a very short time, an additional ring of packing should be inserted so as to take up the shrinkage of the packing due to the heat when it is first applied. (Extracted from a booklet "How to Make Your Globe Valves Last Longer," published by Manning, Maxwell & Moore, Inc., Bridgeport, Conn.)

* * *

Jack Kidney, Akron, O., safety director of the Goodyear Tire & Rubber Co, March 14, presented J. J. Norton, superintendent of the Goodyear plant, at Cedartown, Ga., with the Slusher Safety Trophy, presented every year by the company to that one of its 35 units which makes the best safety record. The Cedartown plant, with more than 1,200 employees, had only three loss time accidents for 1941.

Charles B. Johnson

Rayon warps must be dry before being wound on the loom beam.

Rayon Warp-Sizing Practice

Up-to-date methods for handling viscose and acetate yarn to insure best results

By ARTHUR C. WAYMAN

The first article in this short series, which appeared in the April issue, discussed the correct methods of slashing rayon yarns. This installment covers yarn tension and stretch.

STRETCH CONTROL in slashing rayon yarns is of utmost importance, as yarn with insufficient stretch and those with excessive size are likely to give difficulties in weaving since it may be hard or impossible to weave the proper number of picks into the cloth. This is caused, to a certain extent, by the larger diameter of the yarn end not having the necessary pliability to bend and interlace around the filling yarn. Frequently, some slasher overseers attempt to overcome the excessive stiffness of the yarn by adding more oil to the size mixture, but caution should be exercised as excessive amounts of oil will result in soiled yarn and yarn knots in weaving.

Damage in the opposite direction is possible by over-stretching of the yarn. The reaction of such a warp during weaving will be ends "popping" out at the reed; then, knots won't hold and the yarn will be tender.

Yarn stretch should always be maintained uniform throughout the slashing or the sizing of a warp. Slasher operators differ in their opinions as to correct yarn stretch. However, an attempt will be made to specify maximum percentages, beyond which a warp should not be stretched. Ordinarily, 5½% to 6½% represent maximum value for 55-den. rayon, 6% to 7% for 75-den., 6½% to 7½% for 100-den., and 7% to 8% for 150-den. rayon yarn. [These percentages are those suggested as maxima by the author and may not be in accord with those recommended by other authorities.—*Editor*]

These are figures for yarns intended for plain weaves, such as crepes and twills with crepe fillings. Flat goods, such as lining fabrics and multi-shaft work, should have the mentioned percentages reduced approximately 1%. Thick and thin yarns should be figured on the basis of the thin yarn size. Thus a yarn which varies from 100 to 200 den. should receive not more than 7½% stretch. Such yarn is only as strong as its weakest or thinnest places.

Yarn tension and stretch are related closely. Wherever tension is involved, yarn stretch results to a certain degree; therefore, every effort must be made to maintain uniform yarn tension at all points.

The tension of section beams must be reasonable in proportion to the denier of the yarn and the number of ends per inch. All beams must be tensioned alike, from beginning to end. Again, the amount of immersion that the yarn receives must be regulated carefully, as the longer the yarn remains in the size bath, the greater is the yarn stretch.

Proper adjustment of stretch control units is essential. Some sizers and slashers are equipped with an excellent stretch-indicator which will inform the operator at a glance the percentage of stretch existing in a warp.

YARN SPEED, temperature of drying cylinders, and beaming tension will also affect yarn stretch. Low speeds permit too long soaking of the yarn. Low cylinder temperatures cause yarn to stretch while being pulled around the drying drums. Excessive tension in beaming will, if the elastic limit of the yarn is exceeded, result in elongation of the warp.

The yarn speed in slashing is also important if for no other reason than

operating cost. Speed is in direct relation with drying conditions. Therefore, certain limits cannot be exceeded; in other words, the warp must be dry before being beamed on the loom beam. With the temperature as stated, 75-den. viscose rayon yarn should run at approximately 25 yd. per min., and 100- and 120-den. yarn will run well at 32 yd. per min. Acetate yarns should be run at approximately 5 to 8 yd. per min. less than those specified for viscose rayon of the same denier. The ultimate aim in slashing and sizing is to produce a good running warp in the loom. Caution in slashing, even at a slightly higher cost of operation, will pay great dividends in a steady running loom turning out good cloth.

One form of sizing imperfection frequently encountered in improperly sized warps is known as bristle warps. This term is applied to a warp having many broken ends. Tying of such ends is almost impossible, as the instant a loop is tightened to form a knot the ends simply fall or break apart. The defect is an indication that the warp has been "burned" during slashing, either by too high a temperature of one or more drying cylinders, or by dead stops which allow the yarn to be burnt on the drums. If the latter condition existed, such a warp will run satisfactorily for many yards until another weak spot appears. However, the most common reason for such slasher stops is the use of poor section beams containing lost ends or crossed ends. This is strictly a warping problem, but as such it contributes to the formation of bad effects in slashing. To minimize burnt warp sections, the slashing machine should be equipped with a low gear ratio for operating at a very low speed. Skilled slasher tenders will then be able to piece up ends without the machine coming to a dead stop, and this prodecure is one of utmost importance in slashing.

(*The next installment of this series will appear in an early issue.*—Editor.)

Spinning Room Practice

Faultily-built bobbins, what causes them and how to prevent them

By WILLIAM STOCKTON

This is the sixth and final installment of a series of articles on cotton mill spinning room practice, with special emphasis on causes and prevention of yarn imperfections arising in the spinning room. The material was compiled from various sources and was used by Mr. Stockton in employee training courses in several southern mills.

BADLY WOUND BOBBINS result not only from improper operation of the builder mechanism, but also can and do result from improperly fitting bobbins, incorrect wind, wrong weight traveler, and other causes.

Some bobbins set too high or too low because they do not fit the spindles. Frequently, the cause is off-gage bobbins, but not at all unusual are worn bobbins which slip too far down on the cone of the spindle. A properly fitting bobbin makes a driving fit with the cone of the spindle and a close fit at the top.

A bobbin which makes a driving fit at the top and a loose fit around the cone will vibrate at the base, causing the bobbin to rise on the spindle. Similarly, a tight fit around the cone and a loose fit at the top causes vibration. A high bobbin, however, is not always a sign of a poor fit, because lint frequently accumulates in the spindle hole and prevents the doffer from pushing the bobbin all the way down; lint can be removed easily with compressed air.

The result of a high bobbin is that the yarn is wound too low on the bobbin. This also tends to cause the bobbin to rise still farther on the spindle while the frame is running.

Soft bobbins usually are caused by the use of travelers that are too light for the work. They may also be caused by a wind that is too open. Another cause, and one that should be obvious, is that a bobbin cannot be made as hard with weak soft-twisted yarn as it can with strong hard-twisted yarn.

Proper length of taper is important, inasmuch as a taper that is too short causes snarling and a taper that is too long causes loss in yardage. It is necessary to find a place between the two extremes, where narling does not occur and maximum yardage is placed on the bobbin. Correct taper is dependent on the number of picks used. Additional picks increase the taper, fewer picks decrease the taper; and both bottom and top tapers are changed a like amount. It is common practice to build a package having a slightly longer taper at the top than at the bottom in order to take care of the extra handling a package generally gets at the top. The long taper at the top is made by setting the builder stand slightly low.

A ridge is sometimes formed at the top of the bobbin in the process of winding the first few layers and its formation might indicate that an insufficient number of picks has been used, but if a desirable taper has been formed at the bottom of the bobbin, then this taper indicates that picks are not responsible for the ridges at the top of the bobbin. Careful observation of a bobbin with a ridge will show that the second layer has been laid above the first. The same will be found of each succeeding layer, when in fact, each succeeding layer should be lower on the bobbin. From this last statement it is evident that movement of the rack toward the builder stand shortens the effective leverage of the builder arm causing each layer of yarn to be shorter than the preceding layer. The result of shortening each layer should be a desirable taper at both ends of the bobbin.

It is important that the first layer be positioned correctly on the bobbin. If the builder and cradle stand are set in the proper position, but the ridge at the top of the bobbin is still in evidence, the starting position of the rack was not properly set. The remedy is to readjust the stop screw so that the starting position of the rack will be nearer the builder stand, and a desirable setting of the stop screw is as far in as it can be turned. However, in extreme cases it may be necessary to change the check nut from the outside of the builder to the inside.

When the sides of the bobbin are not parallel, for example when the diameter at the top is greater than that at the bottom, the lifter rods may be too short. This comes from the slower motion of the rail at the top of the stroke than at the bottom when the lifter arm swings farther above a horizontal lines than below it. The remedy is to get longer rods or what is cheaper, to put shoes under the short rods. This requires the readjustment of the position of the ring rail. Sometimes a bobbin may be made larger at the top than at the bottom when the traveler is too light.

In this series of articles I have attempted to deal only with the defects in yarn that can be traced to faults of the spinning frame, and I have not touched on draft, quality of roving supplied, etc. When faults are discovered which are not the result of any of the conditions which have been discussed, they should be carried back to the card room, and a thorough check-up made there.

QUESTIONS & ANSWERS

Set Marks in Spun-Rayon Fabric

Technical Editor:

Inclosed is a piece of spun-rayon cloth which we are running. We are having a lot of trouble with set marks, similar to the one in this piece. We shall appreciate it if you can tell us anything that might help us to prevent set marks. We have tried all kinds of settings on our looms but it did not help. This cloth has 4,128 ends; 43½ in. wide, 20s warp yarn, 20s filling; 30/2 selvage drawn 4 per dent, 12 harness 8 for body, 4 for tape selvage; on XD Draper looms. If this loom stands 2 to 3 min., it makes a set mark. (8846)

The following suggestions should be of help in overcoming this trouble: Have whip roll set straight in line with breast beam. See that both sheds are open the same amount, not one different from the other. Set warp stop motion so that ends do not come into contact with bar and are kept in warp line. Adjust harness to close at fell of cloth; if this does not help, close it earlier, until trouble is eliminated. Check sand-roll to see that cloth does not creep, as this may also cause the trouble.

Note that the warp ends are sized heavily. If the sizing can be cut down somewhat, this also will be of benefit, as marks of this character occur more often on stiff ends than on pliable ones.

Loading Kiers With Two Strands of Cloth

Technical Editor:

Due to present conditions, I should like to know just how to load a kier with two strands of cloth at same time instead of loading kier with one strand of cloth. I know this is not a new idea, but would like to try it out, the idea being to save approximately 50% of the loading and unloading time. On present kiers I have automatic kier pilers.

When loading kiers double strands, is it necessary to have strands of same construction? Also, is their any special trick to keep the two strands from becoming tangled?

The information I am asking for refers to 44x40 through 80x80 cotton piece goods. (8854)

There is no particular difficulty in loading a kier with two strands at the same time. It is desirable, but not absolutely necessary, to have the same constructions in both strands. If different constructions are handled, there should not be too great a difference in the fabrics. For example, a 64x60, 5.35 yd. fabric and a 60x48, 6.25 yd. fabric could be run together, also an 80x80, 4 yd. and a 72x76, 4.25 yd. could be run together. The general rule is to have fabrics which give approximately the same amount of stretch and have the same general characteristics run together. The nearer alike the fabrics are, the less trouble will be encountered.

When taking goods from the kier, the distance from kier to first pot-eye and from first pot-eye to dividing pot-eyes should be as great as local conditions will permit. This gives the two strand a chance to "shake out" and makes operation easier. The sketches show the method of loading and unloading the kier. You will have to do a little experimenting to meet local conditions. For a start, we suggest that you begin with the same fabrics in both strands. With a little patience, you will undoubtedly work out a satisfactory method of two-strand operation.

True Piques

Technical Editor:

According to "Technology of Textile Design," by E. A. Posselt, to be a true pique a fabric must contain three sets of yarns (plus stuffer yarns). Two sets of yarns form the face of the fabric and the third set floats on the back except where it comes to the front between the wales. Other ribbed fabrics are described on page 142 and illustrated on page 143. In these fabrics the yarns alternately weave on the face and float on the back. W. Watson in "Textile Design and Color" described piques in the same way as Posselt.

I have not been able to find true piques in stripes either warpwise or fillingwise. In checking with Hoye's article, "Staple Cotton Fabrics," TEXTILE WORLD, August, 1937, I am unable to determine whether piques, the way he describes them, have two or three sets of yarns besides the stuffer yarns.

The revised edition of "Textile Fibers and Their Use," published by J. P. Lippincott Co., carries an illustration, taken from page 141 of Posselt's "Technology of Textile Design," in which three sets of yarns are used. Will you kindly clear up this matter for me and tell me where I can find piques in stripes? (8843)

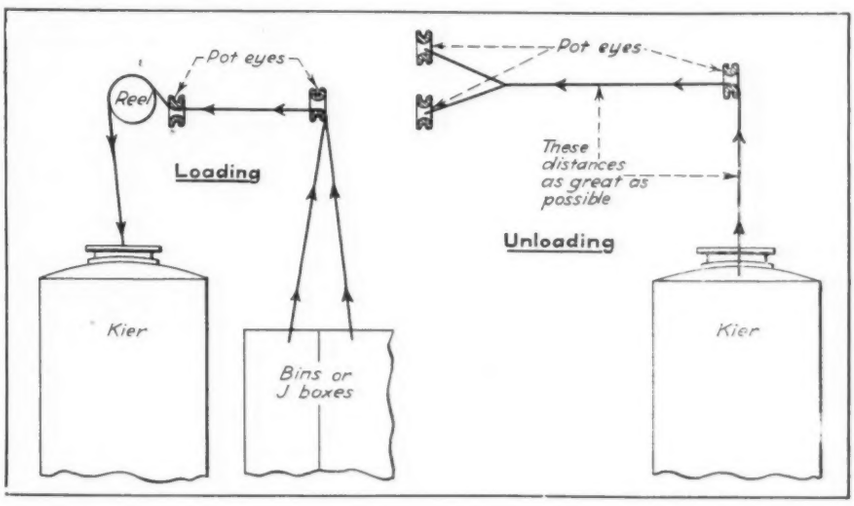
The following reply to this inquiry was supplied by John Hoye, whose series of articles on "Staple Cotton Fabrics" is scheduled for early publication in book form:

Domestic piques with cord effects are warp piques, similar to Bedford cord but lighter; there are no domestic piques with a filling cord. There are, however, domestic piques made with two warps and two fillings, but these are novelty piques and are referred to as birdseye, pique, pigskin, etc.

The reason why many people in this country are confused on the definition of a pique when reading English textbooks is because they cannot find a domestic fabric made the same way; i.e., with a cord effect in the filling.

In all my experience in this market, I have only seen one example of a filling pique cord. The novelty filling piques made with two warps and two fillings are more or less standard, and are sold because of their unusual textures and appearance.

I think the reason why the filling pique cords are not made here is because they would not look well in women's garments and perhaps would give the appearance of "width."



RAYON & SILK SECTION—Chapter VI (Continued)

Picking-Stick and Sweep-Stick Adjustments

By H. E. WENRICH

PICKER STICKS that have become twisted slightly sidewise may be straightened by cutting a narrow piece of leather and inserting it along the edge of the picker-stick shoe, so that when the rocker-iron bolt is drawn tight, the stick will be straightened into correct position. One of the causes of sticks twisting sidewise is that the lug, shown in Fig. RS34 (March issue page 108), sometimes wears off the bottom rocker-iron. This lug guides the top rocker-iron, and when worn can be renewed by welding. Keep this lug well greased.

The rocker-iron picker-stick-check assembly is comprised of a bolt fitting through a core which holds a spring in a cap. When the hook on the spring becomes broken, a new hook can be formed by bending the spring in a vise. Do not allow the loom to stand idle waiting for this repair; have a right- and left-hand spring at the loomfixers' bench ready for replacement. The old spring can be shaped up later and held for another break. Always keep this assembly well oiled.

In adjusting the rocker-iron check, push the picker stick forward with the hand to get the feel of the tension desired. It should be just strong enough to pull the stick back to correct position. If the tension is too great, the stick will fly back too solidly against the shuttle check, and, as the shuttle enters the box, it may strike the picker too harshly, rebounding a trifle and causing rough cloth and loom banging.

The leather check strap shown should be cut wide so as to fit on the full surface of the cap, but one end should be so narrowed that it will go up through the rocker iron when the picker-stick is forward. A handy method of fastening this strap is to use a screw to fasten it to the stick, in place of attaching it under the strap cap.

Replacing a broken stick with one of the same pattern can be accomplished in a minute by following this method: Pull the leather strap and insert a wrench head between the spring hook and rocker iron to take tension off the stick. Remove the screw from the strap. Take out the rocker-iron bolt. Remove the hold-up and pull the stick up out of both rocker irons. Insert the new stick and reverse the method just outlined. After screws and bolts are tight, remove the wrench, and the tension on the assembly will be the same as on the previous stick, because the assembly itself has not been touched.

On some types of rocker irons, a wooden or fiber plug serves as a means of retaining the stick in exact position in the irons. When this plug wears out, the top rocker-iron moves in toward the loom frame, causing loss of considerable pick. Keep a full-size plug always in position, to avoid trouble.

More pick can also be secured by placing washers between the loom frame and the rocker iron. However, this method should not be resorted to until all other methods have proved unavailing in securing additional pick.

Fig. RS35 illustrates a box-side picking stick with a fiber piece inserted at the point where the rawhide picker wears, to increase the life of the stick. The fiber piece should be long enough to permit the picker to wear between the two screws used to fasten it to the stick. Then, when the fiber wears through, it can be quickly replaced with a new piece.

At times the lay may have a jerky movement when picking from the box side, or from the quill, or shuttle-change, side on an automatic. In such instances, it will frequently be found that the picker stick has a hollow worn into it, and that the rawhide picker is catching on the lower hump of the worn place, causing the lay to jerk when picking the shuttle forward. This will frequently cause the stick to split from this point; but the trouble can be remedied by trimming the wood out a little to remove the humps at top and bottom, on which the picker is catch-

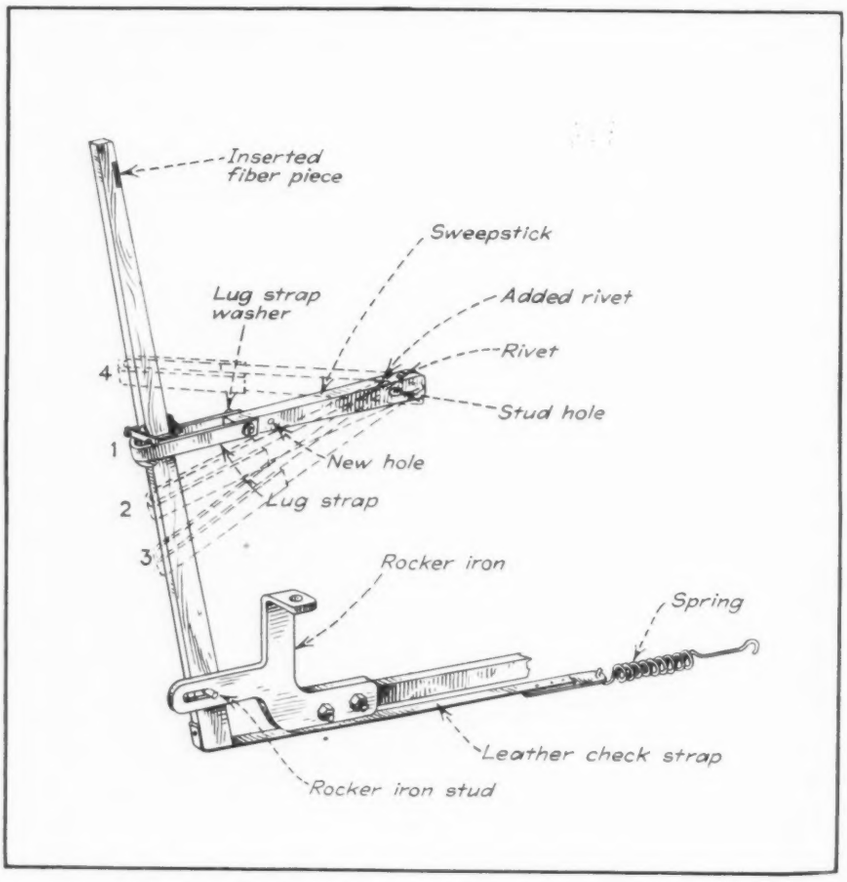


Fig. RS35. Picking stick and connections, on box side.

ing. A better fix, of course, is to remove the stick and insert a piece of fiber, as described.

On looms having the type of rocker iron shown in this diagram, do not place washers on the rocker shaft to obtain additional pick, unless the box is too far in toward the loom frame. Additional washers in this position move the rocker iron outward, and may bind the box-lifter rod. When the box-lifter rod binds inward, the logical fix is to move it outward.

Every loomfixer would like to know how he can practically eliminate the chances of broken hold-up screws. These, of course, have to stand a terrific upward pressure on every forward motion of the sweep stick. The best answer is to have the sweep stick as nearly level as possible, as illustrated at point 1, when the sweep is approximately 9 in. Other fixes are to place an additional screw on the bottom and top of the hold-up, or to use other means of holding the hold-up in position.

In making adjustments for pick on the sweep stick, the hold-up can be moved down to point *2*, but moving further down to point *3* or up to point *4*, is going to extremes, and is likely to cause trouble. If the necessity of adding more pick seems to indicate moving the sweep stick below point *2*, use some other means to obtain the extra pick. Likewise, if removing pick, or power, means moving the sweep stick above point *1*, use some other method of decreasing the amount of pick.

Additional pick can be placed on sweep sticks by cutting off the end, and boring a new hole, as shown in Fig. RS35. The lug strap can also be moved in on the sweep stick for additional pick, or out for less pick. There must, however, be play at all times between picker stick and sweep stick to prevent binding.

Pick may also be adjusted by moving the rocker-iron stud forward for less pick, or backward for more pick.

Most sweep sticks have a rivet through them, as shown, in front of the hole. Placing another rivet through, in back of the hole, will prolong the life of the stick. When stud holes become enlarged, best practice is to replace the worn sweep stick.

Check straps of the type shown in this illustration are fastened to a spring which is secured to a casting on the rocker shaft or loom-frame girt. There are several holes in the strap, which allow correct adjustment of spring tension. Hook the leather strap in place with the spring hook pointing up, to prevent the hook from catching on the floor. The hook on the opposite end can be pointed down, as the bracket to which it is fastened holds it off the floor and keeps it stationary. Spring intensity is tested with the hand. As little spring tension as possible should be used.

WOOL SECTION—Chapter XIII (Continued)—Harness Motions

By EUGENE P. SCHREMP

CLOTH DEFECTS caused by defective harness motions are a serious problem. If imperfections are allowed to run unnoticed in weaving, the fabric may be unmerchantable. Several of the most common defects of harness motions are harness skips and shuttle skips. Harness skips are caused by a harness not lifting or dropping at the proper time in relation to the pattern.

Skips running completely across the fabric may be caused by the pattern chain not being made correctly. In this case, the skip will be at the same place in the fabric with each complete revolution of the chain. But, if the chain is checked with the draft before it is installed, this trouble might be eliminated. Each chain roll should only lift one lever; however, if the lever is out of line, one roll may lift two levers and harness skips will result. Worn chain rolls and tubes may cause a roll to move out of place and lift the next vibrator lever which will cause skips all the way across a fabric, but the skips may not repeat at equal intervals as the roll might not raise two levers at every revolution. When installing a chain, one should check to see if the rolls line up with the runs on the levers; wire separator rings are sometimes used to line up a chain.

With older type looms, the chain should be checked for end play. Bent levers or broken comb teeth will also cause a skip all the way across a fabric. Worn or broken teeth on the cylinders or vibrator gears are common causes of harness skips. Again, improper timing of the lock knife may hold a lever up, when it should be down.

To determine the harness that is making a skip, pick out the filling to the skip and then lift up the end that is skipping and determine which harness it is drawn in. This will save time in locating such trouble.

Skips running partly across the fabric may be caused by a harness lifting or dropping at only one end of the harness motion. One of the most common causes of these skips are broken harness wires or straps. However, different devices are sometimes added to a warp stop motion to stop a loom when a strap or wire breaks. Harness frames should be inspected for loose hooks which may turn and catch the next harness, thereby causing a skip. Looms should not be run with spare heddles bunched at the ends of the harnesses, as these are liable to catch other harnesses.

Skips extending a short distance at the sides of the cloth may be caused by the shuttle entering the shed before the harnesses are open sufficiently to allow the shuttle a clear passage. This action may be caused by late harness timing, or by the picking motion being set too early. Early harness timing may cause trouble when the shuttle is leaving the shed and skips may be caused by a shuttle lifting as it leaves the box; then, there is always the possibility of a smash.

Filling kinks can sometimes be eliminated by settling the harness motion for an early crossing. This practice will also eliminate knot kinks which occur frequently in fabrics constructed with a large number of warp ends.

Floats or small skips are quite common defects appearing in some types of fabrics. Cotton weaves of fabrics employing hairy yarn should be given special attention as the warp ends frequently stick together and allow the shuttle to go over or under them, resulting in a skip. When a warp of this type is placed in a loom, care should be taken to have the harness frames the same height. The shed should be as large as possible without causing excessive warp breakage. Moving the warp stop motion nearer the harnesses or putting in lease rods will make a shorter shed and have a tendency to stop the ends from sticking together. Setting the eccentric gears for fast motion may help eleminate skips, but trouble may be experienced by excessive warp breakage.

Skipped threads running lengthwise in the fabric are often caused by broken heddles or by a weaver neglecting to draw a broken warp end through the eye of the heddle. Frequently waste accumulating behind the reed may prevent some warp ends from lowering sufficiently to allow the shuttle to pass over them.

NEWS OF THE MONTH

Confer with Government Agencies On New War Research Program

The objectives of the newly-formed Textile Research War Council were outlined to representatives of the various Government agencies involved in the purchase of textiles for war use, at a recent meeting in Washington held under the joint auspices of the Textile Research Institute and the Textile Foundation, sponsors of the new program. The plan had been endorsed by executives of the major textile associations at a previous meeting in New York, during which the Council was organized, representative of all those groups.

At the Washington conference, spokesmen for the Army, Navy and War Production Board hailed the program as a constructive step toward the solution of the infinite number and variety of problems arising out of textile-plant conversion and the increasing shortage of essential textile raw materials. Plans were laid for continuing conferences on specific problems as they arise, particularly as they may affect existing specifications on military fabrics.

Under the new program, the Textile Research Institute will act as clearing-house for such problems, and will call them to the attention of the associations directly involved, or will initiate research on problems which do not fall in any one category. The main feature of the program is a new tempo, whereby such problems will be given immediate attention.

The conference was the result of a suggestion made by Franklin W. Hobbs, chairman of the Textile Foundation, at a previous meeting of the executive committee of the Textile Research Institute.

Representing the Quartermaster Corps at the Washington conference were: Lt. Col. R. P. Stevens, Col. H. B. Hester, Col. L. O. Grice, Maj. A. E. Dennis, Capt. W. G. Ashmore, and Messrs. Brown, Frazee and Buttland. Lt. C. W. Folds represented the Navy. Frank Walton was there from the War Production Board.

Representatives of the Textile Research Institute included: Fessenden S. Blanchard, president; Edward T. Pickard, executive secretary; Dr. William D. Appel, chairman, technical research committee; Julian S. Jacobs, recently appointed editor of *Textile Research*; Douglas G. Woolf, chairman, publications and publicity committee.

National Federation Holds Annual Meeting

The National Federation of Textiles held its 69th annual meeting in New York, April 28. Details will be given in these columns next month. Directors were elected, who at a subsequent meeting will elect officers. G. H. Conze, completing his fifth term as president of the federation, featured in his annual message the realization during the year of long-desired unification of interests among mills weaving rayon fabrics, and the active part played by the Federation in making available increased production facilities on parachute fabrics to the Army Air Corps.

Underwear Institute to Hold Annual Meeting May 21

The annual meeting of the Underwear Institute will be called to order at 9:30 a.m. on May 21 at the Benjamin Franklin Hotel, Philadelphia, Pa. For many years this annual meeting has been held in conjunction with the Knitting Arts Exhibition. In the absence of that event, the Institute decided to continue its meeting at Philadelphia as a central meeting place for its membership. The meeting is planned to help manufacturers get into war production. A distinguished speaker will address members during the luncheon session.

Hold Trade Practice Conference on Color Fastness

At a Trade Practice Conference held April 12, in New York, under the auspices of the Federal Trade Commission, representatives of the textile industry discussed four proposed sets of fair-trade practice rules submitted by various organizations. One set proposed by the American Standards Association on standard nomenclature for fastness of colored textiles to various color-destroying agencies was sponsored by the American Association of Textile Chemists

"SALVAGE FOR VICTORY" campaign has been organized in the seven plants of the American Viscose Corp. to assist in the WPB drive to save and re-use materials previously thrown away. Frank B. Martin, of the Marcus Hook plant, has been appointed Supervisor of Salvage for all plants. The picture at left, taken at the Parkersburg, W. Va., plant, shows the 16,000 lb. of waste paper and 10,000 lb. of baling wire which are being saved per month. Other scrap materials being salvaged include pulp wrappers, corrugated cardboard, miscellaneous scrap iron, cast iron, brass, copper, monel metal, aluminum, lead dross, and rubber.

Cotton-Textile Institute

WAR-WORK COVERALL of cotton poplin, Zelan-treated for water-repellency, has features which are proving practical in women's work clothes. It is cut on wraparound lines which allow maximum freedom of action, eliminate fussing with fastening, and flatter the figure.

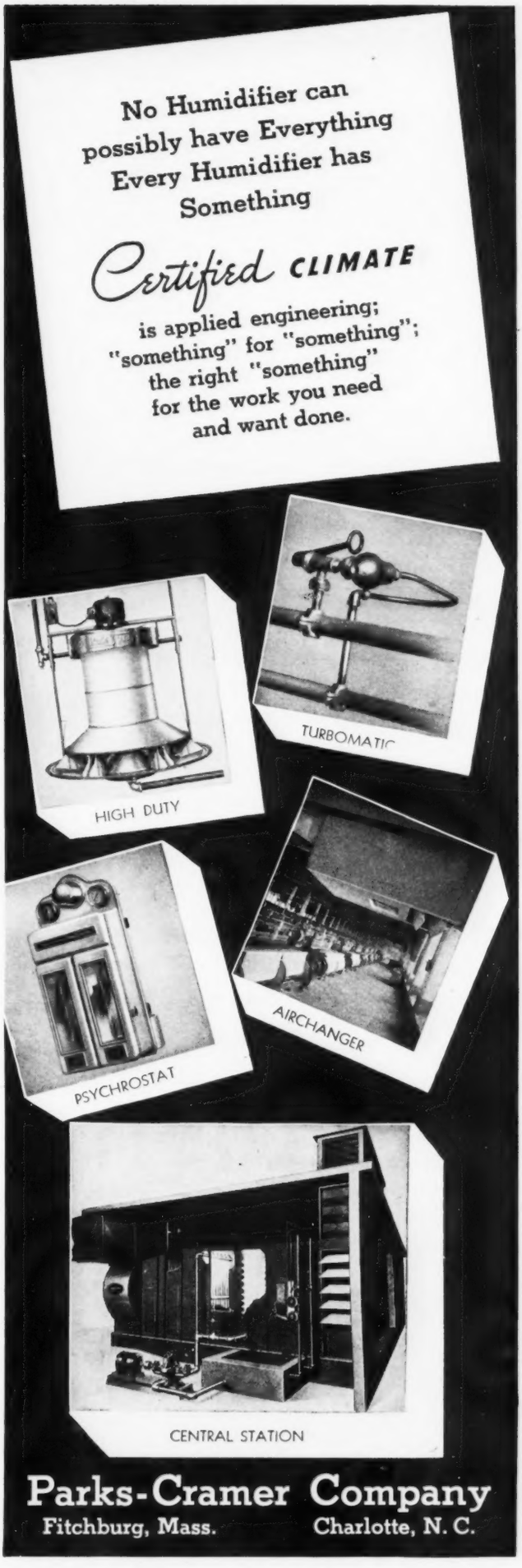
& Colorists and the American Society for Testing Materials. A second set of trade practice rules was submitted by the National Association of Finishers of Textile Fabrics and was approved by the Textile Fabrics Association and the Association of Cotton Textile Merchants. Other sets were submitted by the Linen Trade Association and the National Bureau of Standards.

Annual Hosiery Convention

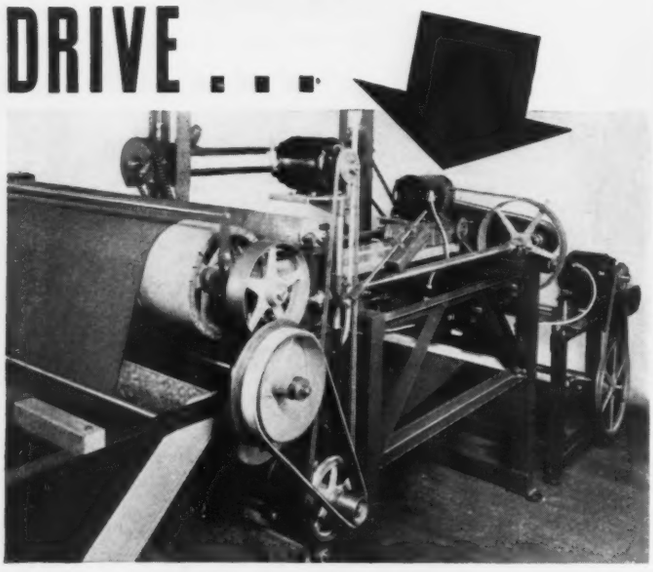
National Association of Hosiery Manufacturers held its annual meeting at Waldorf-Astoria, New York, May 6, as this issue was going to press and details of the meeting will be given in the next issue. The morning's session was followed by a luncheon and in the afternoon Burton E. Oppenheim, Textile, Leather & Apparel Section, OPA, spoke.

Rayon's Role in War-Time Economy

Wartime uses of rayon are outlined by Dr. F. Bonnet in a release issued recently by American Viscose Corp. Among direct military uses for rayon listed by Dr. Bonnet are lining fabrics, helmet linings, neckerchiefs, hat cords, arm band insignia, chevrons, and decorations. High-strength rayon is being employed in manufacture of cords for tires of Douglas B-19 bombers, for sealing gasoline tanks, and in tackle twill for uniforms for parachute troops. The Army is studying fabrics of spun rayon and wool blends for use as blouses, trousers, overcoats, shirts, and underwear. Experiments have been conducted with a view to using strong rayon staple for cartridge cloth. Tenting and camouflage fabrics of rayon are being developed. Indirectly rayon is contributing to the war effort as a replacement for more critical materials.



Better Cloth Rolling with REEVES EQUIPPED DRIVE . . .



● The Windle Combination Doubling, Winding and Open Tube Rolling Machine, pictured above, handles several different rolling and winding operations, on different kinds of cloth. It is equipped with a REEVES Vari-Speed Motor Pulley to provide any desired speed, instantly and accurately for different materials and operations. This speeds up the rolling and insures firm, even rolls. REEVES Variable Speed Drives are standard equipment on most leading makes of textile machines, and are easily applied to machines in use. Send for copy of Catalog-Manual G-419. No obligation.

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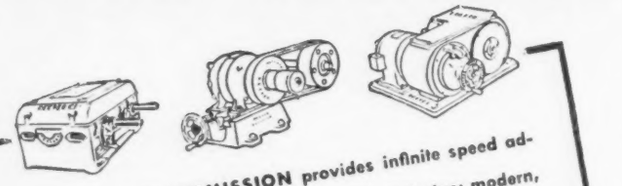
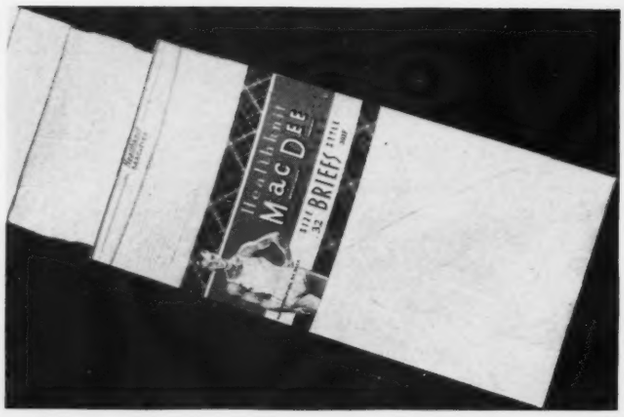
SPEED CONTROL



Left to right: **TRANSMISSION** provides infinite speed adjustability over wide range, 2:1 to 16:1 inclusive; modern, compact, open and enclosed designs . . . **VARI-SPEED** Motor Pulley, simple, direct drive for requirements from fractional to 15 H.P.; 3:1 range . . . **MOTODRIVE** combines motor, speed varying mechanism and reduction gears.



STANDARD KNITTING MILLS, INC., manufacturers of Health-knit MacDee shorts, Kut-Ups shirts and other brands of men's underwear, being unable to secure further supplies of cellophane, have adopted the envelope package shown above, which consists of ordinary white offset paper with the front embossed in the pattern and texture of the garment, actual size. Realism is enhanced by a lithographed impression of the colored thread in the shirts and shorts.

"How Does Your Cotton Grow?"

Under the above title, the first of a series of educational books for children, planned to develop a better understanding of the role of cotton in our national life, has just made its appearance.

The production of the book has a human-interest story for the textile industry. The text was written by Betsy R. Woollen, former secretary to Dr. Claudius T. Murchison, president of the Cotton-Textile Institute. The photographs, which occupy every other page of the book, were taken by Bessie Walker Callaway, of La Grange, Ga. (Incidentally, one of her pictures is used on the front cover of this issue of TEXTILE WORLD, and two others illustrate a story beginning on page 73.) The book was published by the Jacobs Press of Clinton, S. C., in cooperation with the Cotton-Textile Institute. First announcement of its publication was made by Dr. William P. Jacobs, head of the Jacobs Press, at the recent coordination conference of textile-association executives in Atlanta, at which Dr. Murchison presided. A surprise feature was the appearance of Miss Callaway, the photographer, who took a bow at the conference.

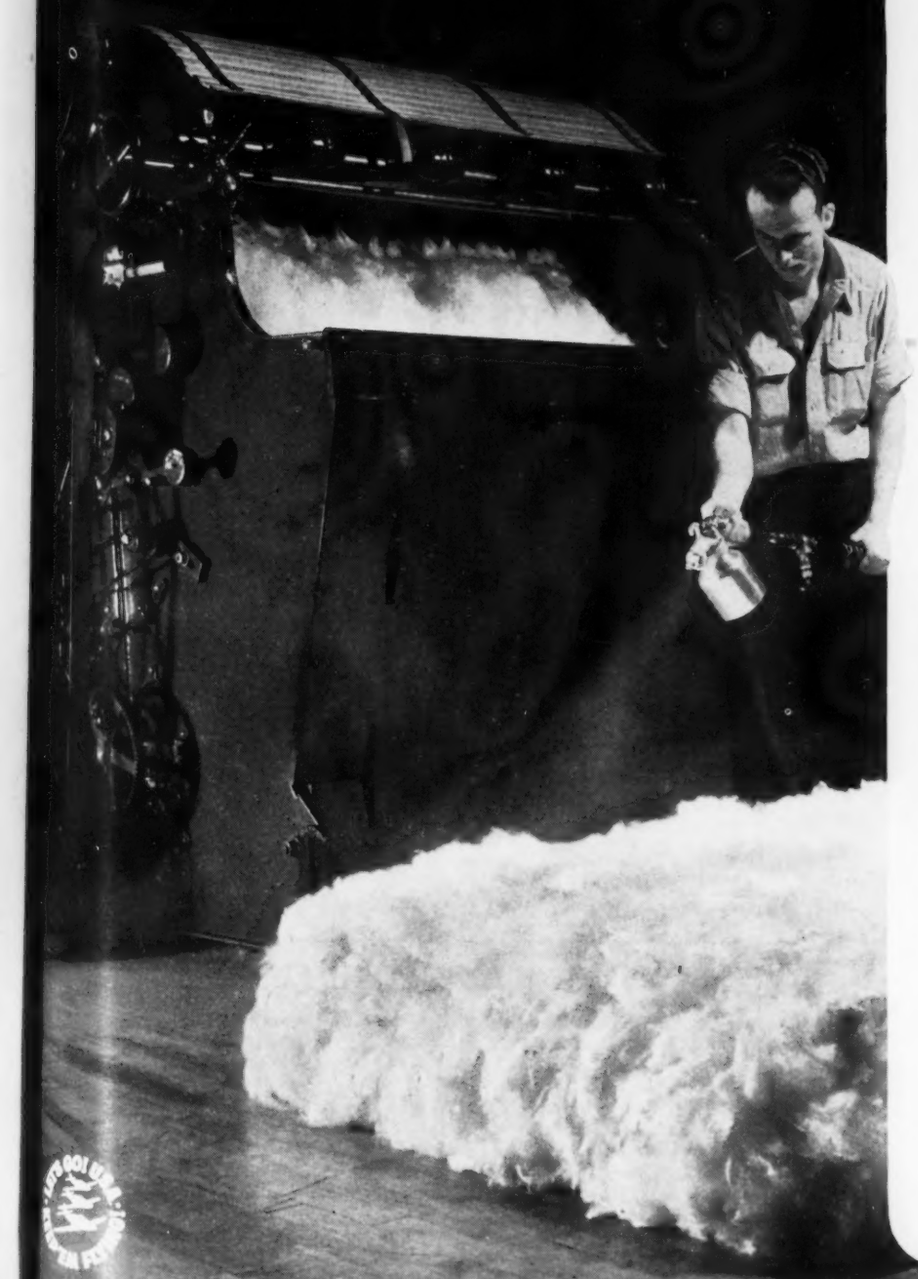
Planned primarily as a supplemental reader in public schools, the book is the fore-runner, it is hoped, of other books which will carry the story of cotton from the farm to the retail counter.

A Wartime "Cotton Week"

In view of war-time conditions, this year's observance of National Cotton Week, May 15 to 23, will be different. With the endorsement of promotion and merchandising executives of many big department stores, wholesalers and chain store organizations, Cotton Week this year definitely will be projected in support of the Government's aims to stress and encourage conservation.

The theme for this year's event, "Cotton Freshness for Fighting Trim," has a timely selling note, attuned to the current stress on physical fitness. This same theme is the keynote of a consumer advertising campaign breaking in the May issue of *Good Housekeeping*. Full pages are scheduled in *Woman's Home Companion* in June and subsequently in other mass circulation magazines. There is thus provided the essential follow-through on a merchandising theme which more than 150,000 retailers will stress.

WOOL ... A Pound Free in Every 33



SUNOTEX OILS

Boosted Yields 3% ... Improved Scourability

With the demand for wool skyrocketing and supplies diminishing, a large manufacturer sought to reduce losses in processing. His problem was studied . . . a switch to **Sunotex RS-420** *made . . . and now he's getting three extra pounds of finished wool in every hundred—plus better scourability and improved finished stock.*

That's a typical report on a processing problem solved by a Sun Textile man—one of those **Doctors of Industry.** Another example of how their technical service and **Sunotex Oils** working as a team are helping processors improve quality and increase yields.

Whatever your processing problem, **Sun's Doctors of Industry** always stand ready . . . willing . . . and able to help you in your mill. Their services are yours to use for improving production . . . the products they have to offer have been developed to maintain that improved production. For proof of what skilled technical service has accomplished, send for your copy of "Helping Industry Help America." Write SUN OIL COMPANY, Philadelphia, Pa.

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HELPING INDUSTRY HELP AMERIC

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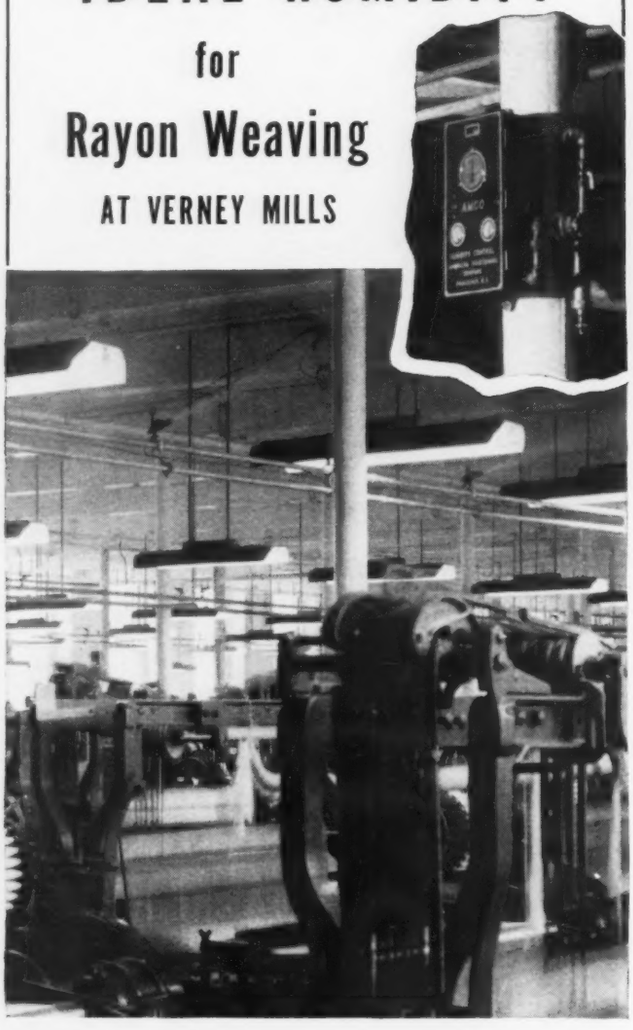


A modern mill . . . modern equipment, modern lighting and a modern *humidification* installation is the by-word at Verney Mills, Inc., Manchester, N. H.

The need for accurately controlled humidity has been met to the entire satisfaction of the mill by the tailor-made AMCO installation.

Modern self-cleaning AMCO Atomizers deliver finely atomized spray in automatically controlled quantity, without drip or feathering down. Their self-cleaning feature in both the air and water nozzles reduces maintenance to a minimum. AMCO Humidity Controls hold the humidity right on-the-nose to prescribed limits

Learn what AMCO can do to speed-up and cut costs in your wartime textile production. Let AMCO Engineers survey your plant and submit report. American Moistening Co., Providence, R. I. . . Atlanta, Boston, Charlotte.

Amco

HUMIDIFICATION

GOV. TALMADGE ADDRESSES ATLANTA TEXTILE CLUB: Fifty members and guests of the Piedmont Hotel, April 6, heard the governor plead for a greater war-consciousness on the part of business men. Above, Gov. Talmadge, at center, is flanked on left by J. Harry McGinty, Jr., of J. P. Stevens & Co., and on right by Claude Fitts of Fitts Cotton Goods Co.

N.A.M's Regional Seminar

In cooperation with the Associated Industries of Alabama, the N.A.M. conducted a two-day seminar at the Tutwiler Hotel, Birmingham, Ala., late in March. The object was to study the best and latest employment relations problems as a means of reducing the chances of misunderstanding which might result in delaying production. Leading the discussions were such able men as R. L. Megee of E. I. duPont de Nemours & Co.; D. W. McConnell, McConnell Sales & Engineering Corp.; J. E. Walters, Revere Copper & Brass Co.; A. S. Anderson, Champion Paper & Fiber Co.; Dr. R. E. Newberry, industrial surgeon; R. S. Smethwest, counsel, and Harvey Saul, director, N.A.M.; Roy Warren, Ball Bros. Co.

Correction

Raymond W. Jacoby, of Ciba Co., New York, was misquoted in our report last month of his remarks before the convention of the National Knitted Outerwear Association. In reference to anthraquinone vat colors and some chrome colors, Mr. Jacoby said that Government demand was so great that undoubtedly there would be very little, if any, supply for civilian needs. Our report spoke of the "commandeering" of these colors, and this was not the word used by Mr. Jacoby. In referring to dyestuff intermediates also important in the war effort, we listed toluic anhydride, which should have read phthalic anhydride.

TEXTILE CALENDAR

Underwear Institute, annual meeting, Benjamin Franklin Hotel, Philadelphia, May 21, 1942.

National Association of Woolen & Worsted Overseers, semi-annual meeting, Crescent Park, R. I., May 16, 1942.

Chattanooga Yarn Association, annual outing, Lookout Mountain Hotel, Chattanooga, Tenn., May 21 and 22, 1942.

Cotton Manufacturers Association of Georgia, annual meeting, Atlanta-Biltmore, Atlanta, Ga., May 29 and 30, 1942.

Southern Textile Association, annual meeting, Charlotte, N. C., June 11 to 13, 1942.

Philadelphia Textile Manufacturers Association, 16th annual outing, Cedar Brook Country Club, June 26, 1942.

National Chemical Exposition, Stevens Hotel, Chicago, Ill., Nov. 17 to 22, 1942.

National Exposition of Power & Mechanical Engineering, 15th annual show, Grand Central Palace, New York, Nov. 30 to Dec. 5, 1942.

Get mad . . . get tough . . . break records . . . Deliver!

Two million additional men before the snow flies . . .

A total of nearly four million men before winter depending on *you* for clothing and equipment . . .

The United States Army invests $90.35 in clothing for the average enlisted man upon his induction. Maintenance cost of clothing may run almost as high every year.

It's a big job . . . and it's getting bigger every day.

The mechanical equipment of the Textile Industry has been and must continue under terrific strain. We must work harder, produce faster.

Thus, shall our armed forces have all the clothing and equipment they need without serious curtailment of essential textiles for civilians, a safeguard against inflation.

Mill engineers and superintendents are seizing every opportunity to repair or replace obsolete equipment. Since 1820, the Butterworth Organization has served the Textile Industry . . . pioneering, building and improving machinery for the Wet End of Textile Finishing.

Today, while the making of gun mounts has first call on our facilities, we are still ready to do everything we can to keep your equipment at top-notch efficiency.

H. W. BUTTERWORTH & SONS CO.
Main Office and Works, Philadelphia, Penna.
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont.

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

This Is NO TIME To Be a Squirrel!

Squirrels, you know, are always hiding away more food in the ground than they can possibly use.... But for some reason, there always seems to be enough food around to save them the trouble of digging most of it up.

Probably some companies, unintentionally of course, are playing "squirrel"... by tucking away supplies of alkalies "just in case something happens..."

This is an excellent way to help make that "something" happen *right here at home!* If you build up alkali inventories beyond normal requirements, you are taxing production facilities, and preventing delivery of vitally important basic war materials that are urgently needed *now* for the production of ammunition, guns, airplanes, clothing and hundreds of other war necessities.

There is actually no necessity for "stocking up" on alkalies. The raw materials for making alkalies are abundant in America. There are many giant plants now manufacturing tremendous quantities of the finished product. Obviously, war needs come first, which may necessitate sacrifices on the part of companies not producing war materials. In general, however, there are enough alkalies to go around *if none of us plays squirrel.*

FOR VICTORY BUY WAR SAVINGS BONDS AND STAMPS

★ ★ ★

SOLVAY SALES CORPORATION

Alkalies and Chemical Products Manufactured by The Solvay Process Company

40 RECTOR STREET NEW YORK, N. Y.

BRANCH SALES OFFICES:

Boston • Charlotte • Chicago • Cincinnati
Cleveland • Detroit • New Orleans • New York
Philadelphia • Pittsburgh • St. Louis • Syracuse

This and That

The silk growing project at the Admore State Prison, near Montgomery, Ala., is said to be drawing increased interest from the Federal Government.

Dental floss, formerly manufactured from silk, is now being made of Vinyon, according to American Viscose Corp.

Dean Thomas Nelson, of the Textile School of North Carolina State College, Raleigh, N. C., reports that there is excellent opportunity for women who have taken textile courses, and he points out that graduates of academic institutions can complete the requirements for a textile degree at State College in from one to two years.

Annual golf tournament of the Rayon Yarn Credit Association will be held at the Bonnie Briar Golf Club, Larchmont, N. Y., on May 26. A. J. Fryer, of American Enka Corp., is chairman of the committee on arrangements.

"Swim for Health Week" will be celebrated this year during the period June 22 to 27. The program will have the active support of the American Red Cross, thousands of commercial and municipal swimming pools, etc.

Alpha Chapter of Phi Psi Fraternity at Philadelphia Textile School on April 21 initiated as honorary members Clarence J. White, Jr., of Calloway Mills, and Nathaniel M. Mitchell, of Barnes Textile Associates.

Philadelphia Textile School alumni and active chapters of the Delta Kappa Phi fraternity held a joint banquet and meeting in the Engineers' Club, Philadelphia, Pa., April 24. Toastmaster was Joseph Goodavage.

Alumni Association of the Philadelphia Textile School will hold its annual outing at Manufacturers Country Club, Oreland, Pa., on June 5.

Kenosha (Wis.) **Full-Fashioned Hosiery Mills** have been presented with a flag by the army ordnance department for "outstanding defense production." The firm is manufacturing parachutes for the government.

Rhode Island Lace Mills, Barrington, R. I., has set aside a bicycle fund for the benefit of employees living within pedalling distance of the mill and wishing to save automobile tires. Until the WPB ban on the sales of new bicycles went into effect a few weeks ago, 47 bicycles had been bought by the company for workers who are repaying the purchase price on a weekly instalment basis.

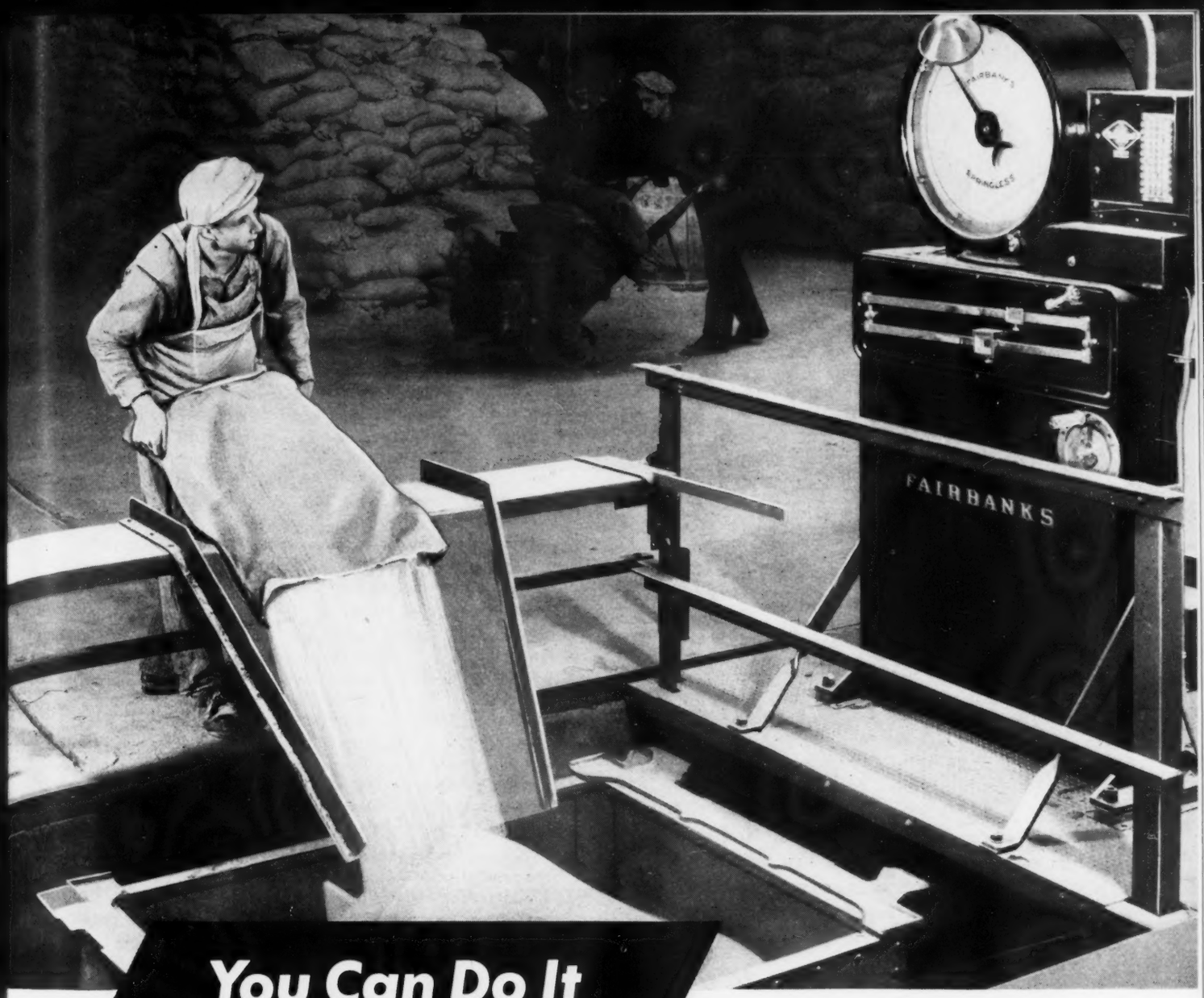
The Memphis Cotton Carnival, canceled this year because of the war, has thrown the 45 floats used for the last 13 years in its annual parade into the scrap metal campaign for the war effort.

The Southern Combed Yarn Spinners Association has donated approximately 100 lb. of copper plates used in its publication "Faces We See" to the scrap metal campaign.

Henry E. Millson of Calco Chemical Division, American Cyanamid Co. spoke on queer forms of light at a meeting of the New York Section, American Association of Textile Chemists and Colorists held April 24 at Rochelle Park, N. J.

Philadelphia Textile School has inaugurated a series of lectures and discussions on manufacture and characteristics of various types of rayon and other synthetic fibers. Among the men on the program are E. S. Kennedy and F. Bonnet of American Viscose Corp.; Dr. Harold DeWitt Smith, of A. M. Tenney Associates; Tom Johnson, American Bemberg Corp.; and G. P. Hoff, of E. I. duPont de Nemours & Co.

Naumkeag Steam Cotton Co., Salem, Mass., is experimenting with new materials, perfected by research department, with view to early commercial production. These include special cotton fabrics, shirtings, and fabrics of



To speed compounding of materials, this Fairbanks Dial Scale was built into a charging car which travels in a pit. At the touch of a button the Printomatic gives an accurate printed record of each batch.

You Can Do It *FASTER* with MODERN SCALES

• Rare is the weighing job which can't be done faster and more precisely with today's vastly improved scales. These scales *print* weight records more quickly than a man can read and write them. They *eliminate human errors.* They weigh while materials are *on the move.*

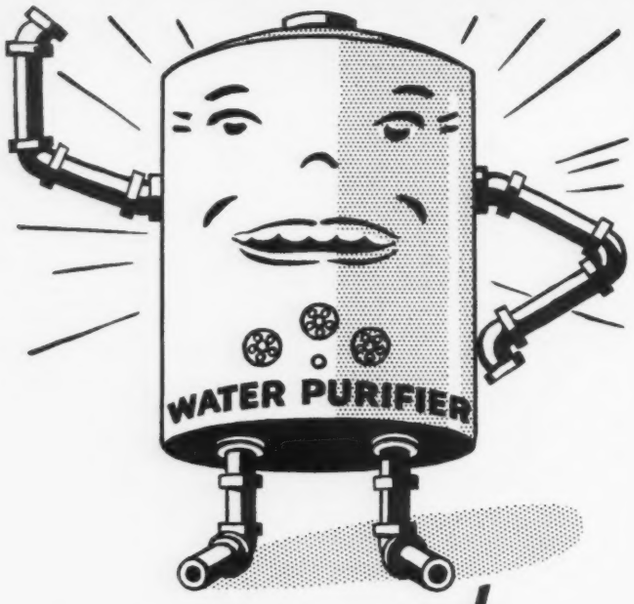
But—important as those advantages are—don't dismiss modern scales as nothing more than better weighing instruments. For scales have assumed amazing *extra* functions which often speed production surprisingly. They *count* small parts and products. They furnish weight records for accounting and inventory control. They weigh and disburse preset amounts *automatically,* and can keep ingredient proportions *secret!*

WE WANT TO HELP YOU

We are anxious to do everything we can to help speed American production. Possibly our scale engineers could suggest new and more efficient applications of scales in *your* plant, or modifications of your present scales to attune them to today's tempo. Write Fairbanks, Morse & Co., Dept. E204, 600 S. Michigan Ave., Chicago. Branches and service stations throughout the United States and Canada.

FAIRBANKS·MORSE SCALES

DIESEL ENGINES ELECTRICAL MACHINERY MAGNETOS RAILROAD EQUIPMENT WASHERS-IRONERS STOKERS
PUMPS MOTORS FAIRBANKS SCALES WATER SYSTEMS FARM EQUIPMENT AIR CONDITIONERS



"Speaking of operations...

That specialist from Clayton, N. J. certainly knew what ailed me and how to cure it. I feel like a new job now, ready to deliver all the 100% soft, clear, iron-free water that the boss needs for his wartime production schedules. Let's go!"

Perhaps your own water purification system is on the sick list and could benefit from our

Free Inspection and Check-Up Service

Upon request and without cost to you, our local representative will examine your water softening or filtering equipment inside and out and give you a full report on its capacity, its mechanical condition and its present operating efficiency. You are not obligated in any way to purchase a dollar's worth of equipment or material even though his survey and recommendations result in definite operating economies. The time is short . . . write today to—

HUNGERFORD & TERRY, INC.

Mfgs. of Water Filters and Water Softeners

CLAYTON, NEW JERSEY

WATER PURIFICATION PLANTS

Fiberglas and spun rayon. Plant is now running over 50% on orders for Government, with probable early increase in such output.

The Cotton Manufacturers Association of South Carolina has announced that it will continue its State-wide cotton staple improvement contest and program. Cash awards, totaling $2,000, have been given to South Carolina farmers under this program.

Civilian Supplies Further Reduced

Cotton goods producers are finding that the expanded production of osnaburgs and bag-sheeting is further restricting the yardage which may be offered to the civilian trade. Twenty percent of the loomage on numerous types of goods is being diverted to osnaburg production. To a certain extent the remaining 80% can be speeded up so as to cover the essential civilian needs for the affected lines. On the fine goods end, Government business is similarly affecting the civilian trade, and combed yarn goods of many types are practically unobtainable.

Wool goods are likely to be such in name only during the third and fourth quarters of the current year, since the war effort is expected to take more and more of the all-wool products, and blends are expected to be the dominating item for civilians. Manufacturers as a whole object strongly to mandatory blends, as they prefer to use the new wool available to them in such proportions as best suits their trade. Civilian goods are being allotted in most cases, and the clothier is likely to take what he can get without being too particular. A ban has been rumored on the use of wool for tropical weight fabrics.

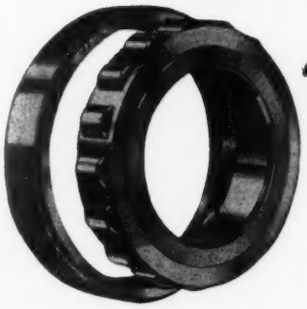
Rayon yarn manufacturers found themselves covered by the general price ceiling setting March maximums upon their products. The ceilings previously extended to cover nearly all rayon gray goods were alleged to be too low in some quarters of the market because of the fact that they did not take into account the recent increase to 40c in the minimum hourly wage. As a matter of fact some rayon fabric prices were so close to cost that mills had been turning from these fabrics to others where the margin was more reasonable.

Hosiery manufacturers are still looking for rayon to take over the major part of the full-fashioned market. Retail support is slow in developing and for the warm weather season there seems to be more interest in anklets and sports lines. However, when next fall comes around the only full-fashioned items available will be rayon and cotton constructions. There is some talk in the market about importing full-fashioned goods, both from England and from South America, but little has been recorded in this category. The cheap lines of half-hose, including children's socks, may disappear from the current 10 and 15-c bracket if present trends continue.

Underwear manufacturers are placing further restriction on civilian orders as a result of increased Government business and further scarcity of cotton yarn. Numerous mills have withdrawn prices and lines. Manufacturers are being put in a difficult spot by the increase in their raw material prices on one side and by retailers' protests regarding smaller advances on the other.

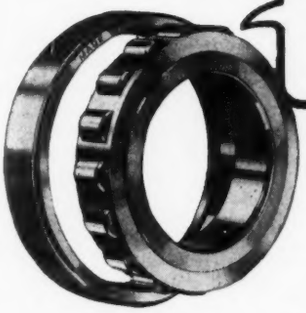
Outerwear continues to book a satisfactory forward business but with numerous limitations. The current bathing suit season has been reasonably good, and manufacturers who have offered sweaters for fall have been encouraged by their reception. In general the new lines of sweaters stick closely to staple types, and serviceability rather than style dominate. Cotton sweaters are receiving considerable attention.

Said 1942 to 1892



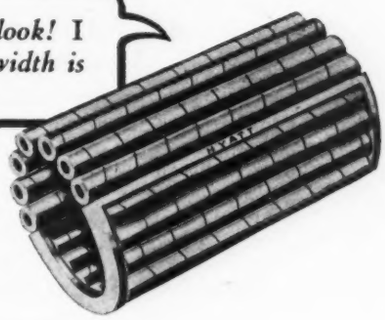
1942: Hi, Old Timer!

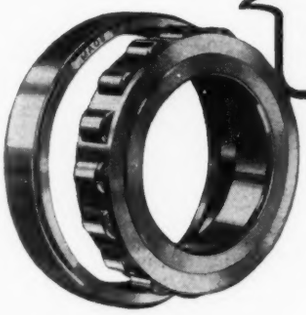
1892: *A little more respect, please. I'm the daddy of our great line of Hyatt Bearings! With a tolerance of .010 in my wound roller diameters I was the Number One bearing of my day!*



1942: Okay Dad, but with my modern design and close tolerance of one ten-thousandth of an inch, I'm the "fair-haired boy" today.

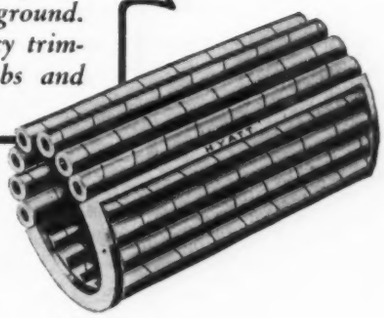
1892: *Hmph! But how skinny you look!* I *had a width of 6-7 inches while* your *width is only 1-1½ inches, young fellow.*

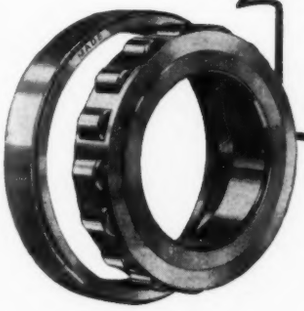




1942: I'm streamlined, old man, but what capacity I possess. And I'm a pretty slick article with my inner and outer race, and my ultra finish.

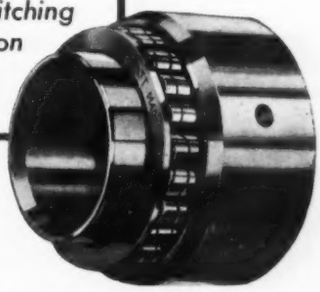
1892: *I know . . . I've watched you develop over fifty years. Sure I was made of only low carbon steel and my finish wasn't even ground. In* my *day, we didn't have all the fancy trimmings—but we handled the tough jobs and handled them well!*





1942: I appreciate all that, old fellow, but think how out-of-place you would be today with that crude half-spacer roller retainment as compared to my swanky bronze cage and microscopically finished solid rollers and races.

1892-1942: You're right, lad. But look me over <u>now</u>. Other than in roller design I've changed considerably during these years. And I'm still in there pitching with you where applications call for my lubrication features and shock load advantages. So—give credit where credit is due!



THE 50TH YEAR OF

HYATT ROLLER BEARINGS

HYATT BEARINGS DIVISION, GENERAL MOTORS CORPORATION, HARRISON, NEW JERSEY

YARN CONDITIONING AT ITS BEST AT YORK

One of two brand-new "H-W" YARN CONDITIONERS recently installed in the plant of one of New England's most alert and progressive cotton mills—

YORK MANUFACTURING CO.
Saco, Maine.

"H-W" design and construction affords thorough and rapid moisture penetration of the yarns at low, unharmful temperatures, without danger of wet spots caused by condensation drip. Automatic control gives constant uniformity through lot after lot of yarn

AT LOW COST

Not only do "H-W" Conditioners do a vastly superior job of preparing yarn for weaving, they do it at an astonishing saving over older methods of conditioning. Consequently, even disregarding the improvement in yarn quality, they pay for themselves in a surprisingly short time. We would take pleasure in showing you at your convenience the results of numerous mill tests.

ALL TYPES OF YARN

"H-W" Conditioners and Twist Setters are being used today for all yarns—cotton, Nylon, rayon, other synthetics, worsted, woolen, silk, and combination.

"H-W" CONDITIONERS
ARE BUILT BY
THE INDUSTRIAL DRYER CORPORATION
STAMFORD, CONN.

NEWS ABOUT MEN

Robert E. Gaylord has been elected president and treasurer of Winsted (Conn.) Hosiery Co., having lately been vice-president and treasurer. In the capacity as president he succeeds the late Edward B. Gaylord. **Charles B. Viall** has been elected vice-president, and is also assistant treasurer.

Jack Kahn, of New York, has been elected president of the Carroll Silk Hosiery Mill, Inc., Hillsville, Va., to succeed **Thomas J. Wallner.** Mr. Kahn represents New York interests which recently purchased control in the corporation from Mr. Wallner. **L. E. Frye** has been elected vice-president and **George Murphy,** treasurer.

Irving C. Valentine has been elected president of the New England Knitting Co., Winsted, Conn., to succeed the late Edward B. Gaylord. Mr. Valentine has been with the company 22 years. **Robert F. Gregory,** head of the New York sales office, has been named to fill the vacancy on the board of directors.

A. J. Walker, vice-president and managing director, has been appointed president and managing director of Holt Renfrew Co., Ltd., Montreal, Canada. He succeeds the late Lorne C. Webster.

Col. C. F. H. Johnson, president of Botany Worsted Mills, and holding a commission in the U. S. Army Air Corps Reserve, acted as toastmaster at the Army Day banquet on April 4 at the Waldorf-Astoria, New York. He was co-chairman with **Admiral R. R. Belknap,** U.S.N., retired, of the Army Day parade and banquet in New York.

E. N. Fidler of Canadian Silk Products Ltd., Sherbrooke, Quebec, has been elected president, of the Canadian Association of Textile Colorists & Chemists succeeding **G. C. Taylor,** of Carl Stohn of Canada Ltd., Granby, Quebec. **F. J. Knight** of Hubbard Felt Co., Ltd., Montreal East, was elected vice-president, succeeding **E. N. Fidler. A. Alexander,** Collins & Aikman of Canada Ltd., Farnham, Quebec, was also made vice-president, **W. King,** *Canadian Textile Journal*, was re-elected secretary-treasurer. **E. Bradley,** Magog Print Works, Magog, continues as honorary president.

Hugh M. Comer, a vice-president of Avondale Mills of Alabama, Sylacauga, Ala., has been elected a director of Southeastern Cottons, Inc., New York.

Harold E. Reed has joined the staff of TEXTILE WORLD at the New York office as assistant editor, having resigned from the International Correspondence Schools, Scranton, Pa., where he was in charge of textile courses. Mr. Reed is a native of Nashua, N. H., and a graduate of Lowell Textile Institute, class of 1937.

Thomas O. Ott, Jr., has succeeded **Gordon B. M. Walker** as southern editor of TEXTILE WORLD at Greenville, S. C., Mr. Walker having enlisted in the Navy as is mentioned elsewhere in this department. Mr. Ott is a textile engineering graduate of Georgia Tech, class of 1927. For the last three and a half years he conducted much of the experimental work on fabrics and novelty yarns at Callaway Mills, La Grange, Ga. He was previously with Jordan Mills and Meritas Mills, Columbus, Ga., and the Old Hickory, Tenn., plant of Du Pont Rayon Co.

Paul A. Chapman has been promoted recently to the position as assistant to the vice-president of the North American Rayon Corp. and American Bemberg Corp., Elizabethton, Tenn. In this capacity he will be plant manager, succeeding **Major Charles Wolff, III,** who has recently gone into military service. Mr. Chapman has been with the company since 1929. **Louis E. Dequine, Jr.,** succeeds Mr. Chapman as chief engineer.

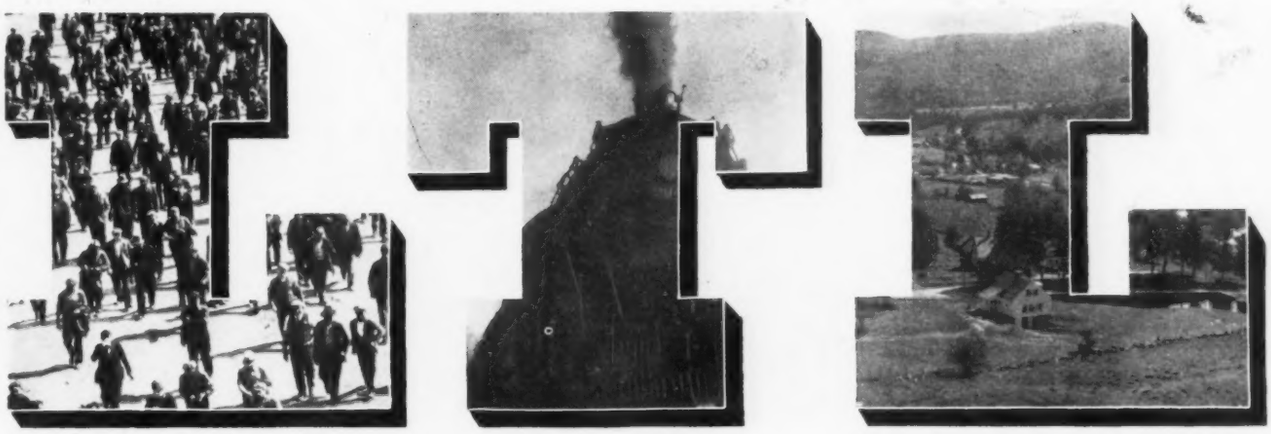
Mortimer Goldsmith, Jr., has been elected second vice-president in charge of operations and a director of the Hess-Goldsmith Co., operating silk mills in Wilkes-Barre, Kingston and Plymouth, Pa. He succeeds his father, the late Mortimer Goldsmith, Sr.

J. K. Pittman, a graduate of N. C. State College Textile School, has been elected secretary of Locke Cotton Mills Co., Concord, N. C.

M. E. Newton is the newly-elected secretary of Quaker Meadow Mills, Inc., Hildebran, N. C.

G. A. Berkstrasser, who was recently elected a vice-president and member of the executive committee of Roanoke Mills Co., Roanoke Rapids, N. C., has been appointed to the same offices in the organization of Patterson Mills Co., of the same place.

PLANNING EXPANSION?
Then you'll want to know about



If you're considering a new plant location you will be interested in L T L — which is the reason 83 different firms have recently chosen locations in the Amoskeag Industries property, in Manchester, N. H.

LTL means Labor, Transportation and Living Conditions, all of which are vital to the success of your new plant — and which, here in Manchester, you can enjoy in terms of satisfying and profitable operations.

Read about Manchester's LTL, and then why not let us send you a more complete and specific information.

LABOR

Cooperative and friendly attitude traceable to higher intelligence and better schooling. Adequate supply of easily-trained workers at all times.

TRANSPORTATION

Strategically - located and splendidly-served to reach national and world markets. Main line B & M service from Boston (55 mi.) to Montreal. Overnight freight to New York.

LIVING CONDITIONS

You and your associates will enjoy Manchester. Good homes available: excellent schools, churches, stores and theatres. Lovely surrounding country for healthful recreation.

GOOD SPACE AT LOW PRICES

We can give you almost any size and type of space that you may want from 5,000 to 250,000 feet. The heavy mill-type, brick buildings are clean, well lighted and heated, protected by sprinklers and fire walls. Industrial gas and power, city water, sidings: even engineering and maintenance service.

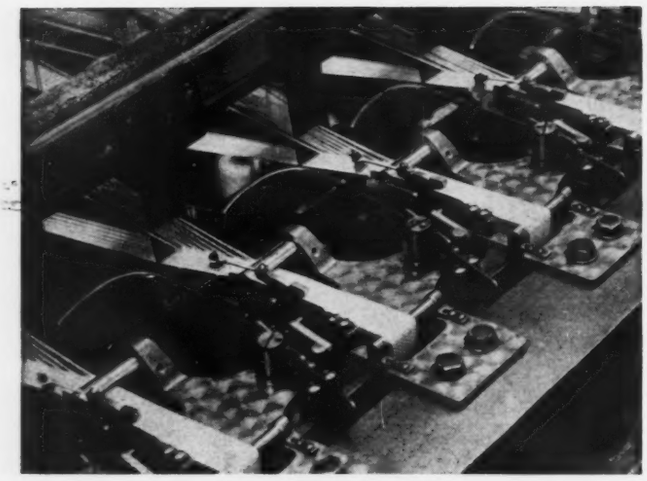
AMOSKEAG INDUSTRIES INC.

Phone, wire or write

Amoskeag Industries, Inc.

MANCHESTER, NEW HAMPSHIRE

A non-profit, all-civic enterprise



CLUTSOM HIGHSPEED WEAVING MACHINES

The Clutsom highspeed shuttleless loom gives high production in a wide range of narrow textile fabrics.

Rigid or elastic webbing, tapes, zipper tapes, venetian blind tapes, rug bindings, ribbons and hospital webs are some of the various items in regular production.

Wages have risen—operators are costly—no material should be wasted that can be saved. The Clutsom machine gives greatly increased production for the same amount of wages paid—cuts material waste to the minimum—no skilled labor required.

A demonstration machine can be seen at this address.

It is possible at present to give limited delivery of machines immediately.

CLUTSOM MACHINES INC.

250 WEST 54TH STREET NEW YORK

Telephone Circle 6-8687

FACTORY: Springdale, Connecticut

NEWS ABOUT MEN

E. A. Pumphrey has been elected vice-president and sales manager of the Amazon Knitting Co., Muskegon, Mich.

Royal Murray, for many years in the textile market and for the last three years sales manager of the packaged goods department for Iselin Jefferson Co., New York, has been appointed textile supply officer of the British Purchasing Commission, with offices in Washington, D. C.

Arthur R. Wachter, for seven years manager of the rayon division of the print works of Pacific Mills at Lawrence, Mass., has joined the American Viscose Corp. as head of the Crown Tested Division, where he will supervise the quality control plan.

Ray H. Bissell has been appointed sales manager of the Nylon Division of Canadian Industries, Ltd. with headquarters at Kingston, Ontario.

O. D. Boyd, superintendent of Martel Mills, Asheville, N. C., has been promoted to general superintendent and has been succeeded in his former position by **E. A. Kiser. W. J. Nipper** has become superintendent of carding, and **R. H. Higgins** superintendent of spinning.

Richard L. Moyle, vice-president of Kendall Mills, New York, is being tendered a testimonial dinner on May 25 to mark the completion of 50 years with his organization. The dinner is under the auspices of the Textile Square Club. Mr. Moyle shares the honors of the evening with **Tom Lamond,** who celebrates the completion of 50 years with Carson Pirie Scott & Co.

Elliot Farley has been elected president of the Atlantic Parachute Corp. recently organized at Lowell, Mass. **Royal Little** is treasurer and **Marshall Rowle** secretary.

R. W. Bates, vice-president, Canadian Woolen & Knit Goods Manufacturers Association, is acting as president in the absence of **H. G. Smith,** who resigned as president upon accepting the position of Knit Goods Administrator with offices in the Wartime Prices and Trade Board, Toronto, Ont. Mr. Bates is vice-president and general manager of Bates & Innes Ltd., Carleton Place, Ont.

M. E. McCrossin, formerly agent of the Atlantic Rayon Corp., Lowell, Mass., has been made production manager for the Bruck Silk Mills, Cowansville, Que. He is succeeded at Lowell by **Leo Power,** who has been superintendent for the Atlantic Rayon Corp., in its plant at Providence.

H. W. Flynn has become manager of Celanese Lanese Corp., Burlington, N. C.

W. Brown, production manager for Shawmut, Ala., unit of West Point Mfg. Co., for several years, has been promoted to assistant superintendent.

H. J. Wilkinson, who has served as manager of Cen-Tex Wool & Mohair Co., San Marcos, Tex., for the last five to six months, has been elected executive vice-president and general manager.

Walter C. Owens has been appointed night superintendent of Victory Mills, Rock Hill, S. C. He was formerly superintendent of weaving at Erlanger Cotton Mills, Lexington, N. C.

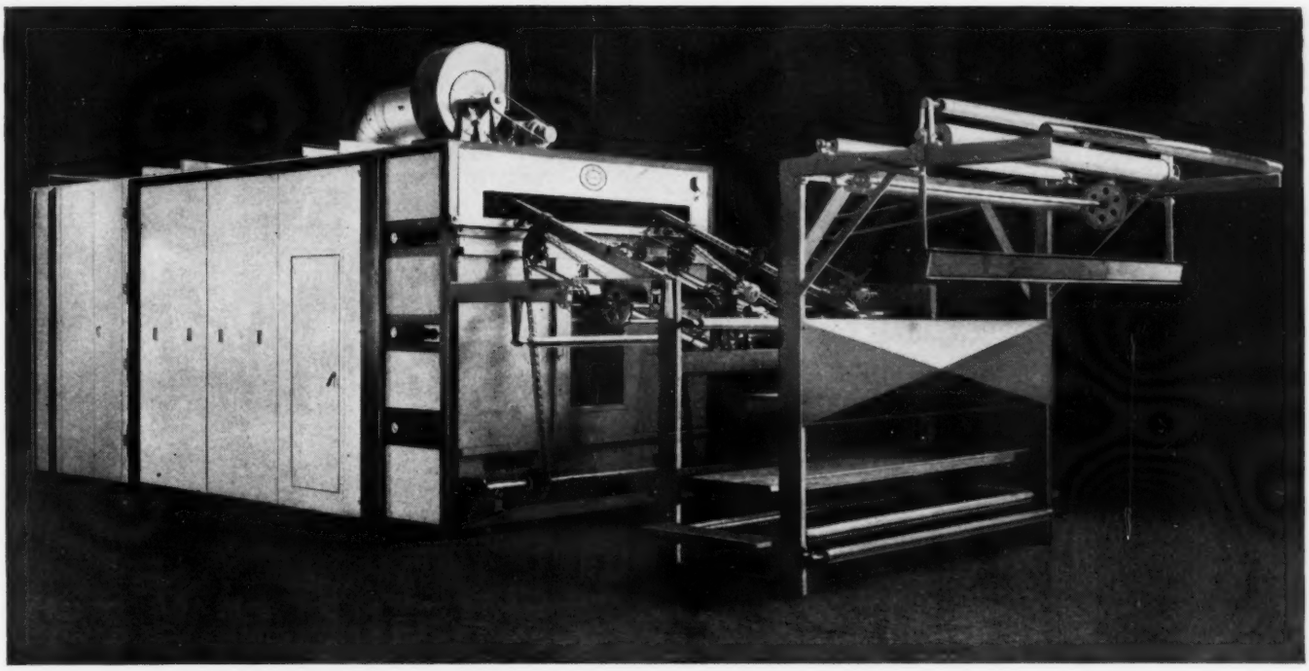
E. J. Wentz has become superintendent of weaving at Riverside & Dan River Cotton Mills, Danville, Va., having recently resigned a similar position at Erlanger Cotton Mills, Lexington, N. C. He is succeeded at Erlanger by **V. D. Snyder** from the Mathews Cotton Mill, Greenwood, S. C. **C. W. Wilbanks,** formerly with Springs Cotton Mills, Lancaster, S. C. has become head of Erlanger's spinning department.

Sydney E. Webster, general purchasing agent, Dominion Textile Co., Ltd., Montreal, Que., has been appointed Director of Cotton Waste in the Cotton Yarn and Cloth Administration of the Wartime Prices and Trade Board. Mr. Webster will specialize on the problems relating to all classes of textile waste, particularly those pertaining to the bedding batt industries in relation to prices, supplies, uses, etc.

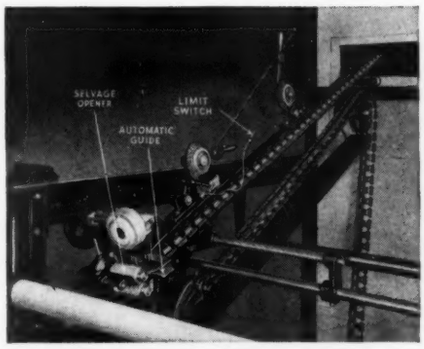
G. D. Cross is now superintendent of Bibb Mfg. Co. No. 2 Mill, Macon, Ga.; **E. J. Hertwig** heads the Payne Mill of the company and **B. D. Cain** the Osprey Mill. **Grady Morgan** has been promoted to assistant superintendent of No. 2. **John S. Turner** is general superintendent of the Bibb properties in Columbus, Ga., and **B. B. Snow** is in charge of the properties in Macon.

Kenneth W. Harvey, manager of York Knitting Mills Ltd., (Harvey-Woods Division), and member of the board of directors of York Knitting Mills, has been appointed to the Wartime Prices and Trade Board. Mr. Harvey will work with **Harold G. Smith** in administering the knit goods section. His position with the York Knitting Mills will be taken over by **C. S. McMaster.**

Paul Groover hes resigned as assistant agent of Pepperell



HOW TO TENTER CLOTH AT HIGH SPEEDS AND LOWER COSTS FOR LABOR, STEAM, AND POWER, AND IN MINIMUM FLOOR SPACE



The cut shown above illustrates Automatic Guider, Patented Hunter Selvedge Opener, and Double Brush mounted on entering rail of Dryer. Illustration shows units mounted on left rail only, but they are furnished on both entering rails. Limit switch to stop Dryer if cloth fails to engage pins is shown by arrow. Limit switch furnished on both entering rails.

New Hunter Uniflow Dries . . .

14-OUNCE WORSTEDS AT 25 YARDS PER MINUTE
16-OUNCE WOOLENS AT 26 YARDS PER MINUTE
IN 12 LINEAL FEET FOR THE DRYING CHAMBER

THE HUNTER UNIFLOW is a new and different cloth tenter. It affords an entirely new conception of air drying cloth with new handle at high speeds. For example: drying time is reduced 1.2 to 4 minutes. Your cloth is exposed to heat and air but a fraction of the time usually required.

The new Uniflow is all metal and requires only one man's operation. It comes complete with automatic guides, selvedge openers, temperature and humidity controls or indicators, recording devices, counters, remote control, tachometer, etc.

Write for production details of installations in outstanding mills.

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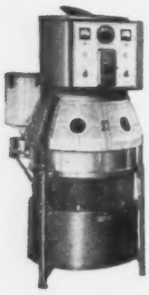
Western Representative: **E. G. PAULES, 343 Bendix Bldg., Los Angeles, Calif.**

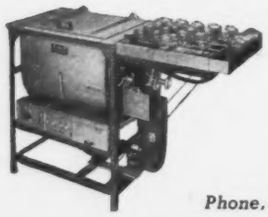
CHECK UP on your War Babies!



DEMANDS of war-production have raised the birth-rate of new processes, new materials, new products, and substitute uses for old products to an all-time high.

Under these conditions the Textile Industry is fortunate in having available the Atlas Fade-Ometer and Atlas Launder-Ometer, laboratory testing instruments which make possible quick determinations of the effect of sunlight and washing.

Vastly improved and speeded-up, these instruments have become recognized internationally as standard for determining sunfastness and washability of textiles. Mentioned in important government specifications, Atlas-Ometer tests meet requirements of leading scientific testing bodies.



It's important to get the facts on the latest Atlas-Ometers if you are concerned with production or use of dyed textiles.

Phone, wire, or write.

ATLAS ELECTRIC DEVICES CO.
395 W. SUPERIOR ST., CHICAGO, ILL.

MEESE, INC.
Madison, Ind.

NEWS ABOUT MEN

Mfg. Co.'s plant at Biddeford, Maine, to join the organization of Pacific Mills. He will be located in the South.

G. Smith has been appointed assistant superintendent of Pepperell Mfg. Co.'s plant at Lindale, Ga.

Joseph F. Graham, New York sales representative for Mill Associates, Inc., has become associated with Philadelphia QM Depot as textile specialist on netting, bobbinet, tricot and marquisette.

Frederick H. McDevitt, formerly in charge of Soule Mill, New Bedford, Mass., for 25 years, has been made general manager for Pierce Bros., Ltd., New Bedford, in charge of manufacturing and sales.

C. S. Bicksler has resigned as second shift foreman of E. W. Twitchell, Inc., Manfg. Shade, N. J., to assume the duties of general foreman of Marian Mills, Allentown, Pa.

A. D. Stewart is now superintendent of the knitting department at Bates & Innes Ltd., Carleton Place, Ont., succeeding **Frank Porteous,** who is now general superintendent of the Grand Mere Knitting Co. Ltd., Grand Mere, Que.

W. J. Bond has recently been appointed superintendent of Romao Mills (McCallum & Robinson, Inc.), Memphis, Tenn., succeeding **O. N. Riley.**

David Provost, of Woonsocket, R. I., is now superintendent of the dyeing and finishing divisions, Rhode Island Felt Co., Westerly. He succeeded **Hugo Hamilton,** resigned.

Walter Gosnell, Jr., overseer of carding at Laurens (S. C.) Cotton Mill for a number of years, has resigned to accept the position of assistant superintendent of Beaumont Mills, Spartanburg, S. C.

J. P. Holder, formerly of Callaway Mills, LaGrange, Ga., has become general overseer of carding at Mississippi Cottons, Inc., Meridian, Miss., succeeding **E. J. Carter,** who has been made night general overseer at the same mill.

Sam Nield is now superintendent of dyeing at Stephens Spinning Co., Manchester, N. H., succeeding **Eugene Tatro,** resigned.

James P. Murphy, formerly of Waucantuck Mills, Uxbridge, Mass., has become superintendent of the Merrimack Mills, in Methuen, Mass.

Allen Cook has become overseer of spinning at Thomaston Cotton Mills, Griffin, Ga.

Earl F. Engley, boss sorter, for 53 years with the Cyril Johnson Woolen Co., Stafford Springs, Conn., has retired.

John P. Harrison, superintendent of Muscogee Mfg. Co., Columbus, Ga., has resigned and has accepted the position of general superintendent of the Georgia-Kincaid Mills, Griffin, Ga.

Elmer Torok, superintendent of power department of American Bemberg Corp., and North American Rayon Corp., Elizabethton, Tenn., has resigned.

C. S. Cox has been promoted to overseer of weaving at Apalache plant of Victor-Monaghan Co., Arlington, S. C.

P. L. Lytton, formerly of Gastonia, N. C., has become night superintendent of the Woodlawn plant of American Yarn & Processing Co., Mount Holly, N. C.

James Oates, for the last 18 months general superintendent of Virginia Mills, Swepsonville, N. C., has resigned.

E. T. Snoddy, formerly of Erlanger, N. C., has become overseer of weaving at Ware Shoals (S. C.) Mfg. Co.

Bill Brown has been appointed assistant superintendent of Shawmut, Ala., unit of West Point Mfg. Co.

E. E. Connor has been promoted to assistant to the overseer of spinning at Virginia Mills, Swepsonville, N. C.

W. H. Irving has accepted position of master mechanic at Dacotah Cotton Mills, Lexington, N. C.

N. P. Bumgardner has become superintendent of Superior Yarn Mills, Mount Holly, N. C.

W. H. Connor, formerly of Swepsonville, N. C., where he was overseer of spinning, winding and twisting at Virginia Mills, has become general overseer of spinning at Avondale Mills, Birmingham, Ala.

Lewis N. Peeler, formerly second hand in spinning at the Priscilla unit of Textiles, Inc., Gastonia, N. C., has become overseer of spinning at the Frieda Mfg. Co., Kings Mountain, N. C.

W. L. Davis has relinquished his position as production manager of Edna Mills, Reidsville, N. C., and is now doing special research work for Carter Fabrics Corp., Greensboro, N. C.

Ralph Estes has resigned as overseer of the cloth room at Alabama Mills, Russellville, Ala., and has become overseer of carding and spinning of Granite Falls (N. C.) Mfg. Co.

W. F. Chilton has resigned his position with Anniston (Ala.) Cordage Co., and has become second hand in spinning at Anniston Mfg. Co.

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For Perfect Fulling

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1 Used with alkali only, it eliminates the lengthy soap boiling operation.

2 Used with soap it prevents congealing, eliminating stuck places, creases and whiplashes.

3 Permitting the use of stone cold soap it prevents the troubles that hot soap causes.

4 It quickly saponifies oil, grease and dirt.

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at our Southern Defense Plant to
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It's the Finish that Counts

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CLOTH ROOM MACHINERY FOR

DUCK

Eight Roll Vertical Brusher

★ Brushing Machines
★ Shearing Machines
★ Inspecting Machines
★ Rolling Machines
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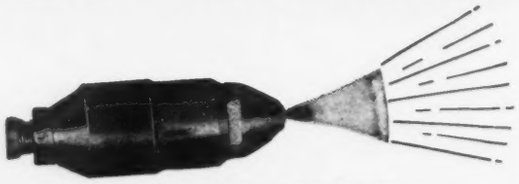
THE CAPACITY DOUBLER



RIHCO TYPE B ATOMIZER

Humidifying capacity can be increased 100% with the same compressor and with no increase of power cost when the RIHCO Type B is adopted. Why? Because this ingeniously-engineered atomizer puts every atom of air to work.

Or, if you wish to install a new system of humidification, you can adopt the RIHCO Type B to cut power costs in half, because this atomizer requires a compressor only half the size of the ones usually employed.

Long life, low maintenance, and trouble-free operation. BE RIGHT WITH RIHCO.

R. I. Humidifier & Vent. Co.

Humidifiers since 1912

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Aldrich Machine Works, Greenwood, S. C.
V. L. Sanderson, 1710 Walnut St., Philadelphia, Pa.
Canadian Textile Engineering, Ltd., Montreal, Quebec

Textile Men in Armed Services

Benjamin Cone has resigned as treasurer of the Cone Export & Commission Co., Greensboro, N. C., to become lieutenant senior grade in the Navy Reserve. He is reporting for duty in the Charleston, S. C., naval station. His duties with the company will be assumed by his brother, Caeser Cone, II.

Dwight M. Wilhelm, secretary of the Alabama Cotton Manufacturers Association, was recently promoted from captain to major in the Air Corps at Maxwell Field, Ala.

Otto Morningstar, director of the West Point Mfg. Co.'s laboratory at Shawmut, Ala., has been called to active duty with the Chemical Warfare Division of the Army.

Ward Cheney, president of Cheney Bros., Manchester, Conn., has been commissioned a lieutenant in the Navy. He is on leave of absence from his company, of which **Harry R. Mallory** has been made executive vice-president to head the firm during the absence of Mr. Cheney.

Major Albert E. Dennis, assistant to the contracting officer at Philadelphia QM Depot was recently promoted from the rank of captain. He has been connected with the Philadelphia Depot since 1933 except for a brief period of duty elsewhere.

Walter H. Nowill, for some years with the Jamison Textile & Commission Co. is in the Army with the rank of major. At present he is assigned to the office of Chief of Ordnance in Washington.

Douglas McPhee, of the drapery department at Mooresvillle (N. C.) Cotton Mills, has been inducted into the Army.

C. C. Baldwin, of Woodward, Baldwin & Co., New York has become attached to the Quartermaster General's office in Washington as a civilian.

Frank Farley, formerly with Minot, Hooper & Co., New York, has been commissioned an ensign in the Navy.

John P. Fuller, an executive at North American and American Bemberg rayon plants at Elizabethton, Tenn., has been commissioned a lieutenant in the Navy and assigned to the Supply Corps.

Perry Brayton, New York representative of the Sagamore Mills, is now at the Naval Air Training School.

Gordon B. M. Walker, until last month southern editor of TEXTILE WORLD, has enlisted in the Navy and started his training for an ensign's commission. Mr. Walker joined TEXTILE WORLD in July, 1940, as assistant editor located at New York, and succeeded W. G. Ashmore (now Captain in QM Corps) as southern editor with headquarters at Greenville, S. C., in July 1941. Mr. Walker is a graduate of the textile engineering course at Clemson College, class of 1937, and after working in the laboratory at Dunean Mills, returned to Clemson to teach weaving and designing until joining this paper in 1940. He is succeeded as southern editor at Greenville by **Thomas O. Ott, Jr.**

Donald Neill, sales manager of Stunzi Sons Silk Co., New York, has returned to active duty with the Navy as lieutenant-commander. Mr. Neill was graduated from the Naval Academy in 1923.

Thomas F. Southgate, Jr., of the New York office of P. H. Hanes Knitting Co., has enlisted in the Naval Reserve and is stationed at the Paymaster's Depot in Brooklyn.

Captain S. Walton Forgy was recently transferred from the Procurement Division of the Philadelphia Quartermaster Depot to the Storage and Distribution Division. He was in the market for many years with Turner Halsey Co., Lorraine Mfg. Co., and other houses.

H. S. Elliott, southern representative for Mill Devices Co., and Carter Traveler Co., divisions of A. B. Carter, Inc., Gastonia, N. C., has been called to active duty with the Army, as a lieutenant in the ordnance department.

Peter M. Strang, textile research engineer, has been commissioned lieutenant, senior grade, in Navy and assigned to special ordnance work in the First Naval District, Boston, Mass.

Charles A. New, who left his position of production manager, Judson Mills, Greenville, S. C., a year ago to enter the Army, has been promoted to major and is on the staff of Col. J. R. Alfonte, Fourth Corps Area Quartermaster as plant protection officer.

Harold M. Clark, superintendent at Avondale Mills, has reported for military duty at Fort McClellan, Ala.

COLUMBIA CHEMICALS

IF YOU WERE IN OUR SHOES . .

If you were in our shoes, we believe you'd feel as we do, the extra responsibility imposed by the wide use of Columbia products in meeting war needs. Products such as we make are essential aids in producing rubber, steel, munitions, chemicals, textiles—virtually everything our armed forces use or wear. In our shoes, you'd keep production at peak levels—and maintain quality at the highest standards—and try to make the most efficient use of every available transportation facility.

This is exactly what Columbia is doing and intends to continue doing.

ESSENTIAL INDUSTRIAL CHEMICALS

SODA ASH • CAUSTIC SODA • SODIUM BICARBONATE • LIQUID CHLORINE • SILENE* CALCIUM CHLORIDE • SODA BRIQUETTES MODIFIED SODAS • CAUSTIC ASH • PHOSFLAKE CALCENE** • CALCIUM HYPOCHLORITE

*Precipitated Calcium Silicate **Precipitated Calcium Carbonate

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PITTSBURGH PLATE GLASS COMPANY

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CHICAGO • BOSTON • ST. LOUIS • PITTSBURGH • CINCINNATI

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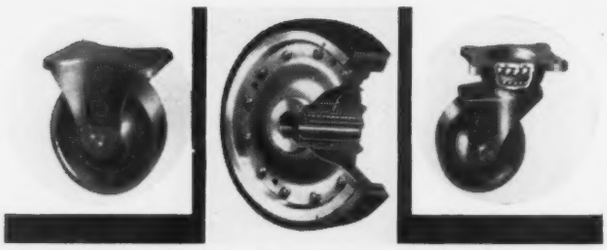

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AND E-Z-ROLL WHEELS

For Savings, Service, Safety and Speed—Demand Darnell Dependability. A caster or wheel for every industrial use
A New FREE Book!

DARNELL CORP., LTD., LONG BEACH, CALIF.
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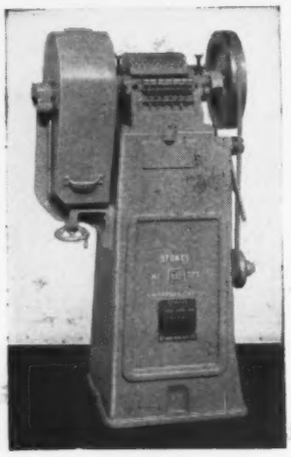
New! Universal Fibre Cutter

For Cutting Rayon, Silk, Wool
Flax, Jute, Cotton Other Fibres



This is an improved machine . . . more accurate and productive, more flexible and economical . . . for wet or dry cutting.

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It makes 500 to 20,000 knife cuts per minute . . . handles 4 to 8 tops or equivalent, simultaneously.

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Instantly adjusted Variable Speed Drive, with synchronized feed, for any desired length of cut or type of material.

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Full range of fibres, from 8" length to Flock, produced by four interchangeable cutter heads.

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Self-sharpening Knives, Tension Release for Feed, Hand Wheel Adjustments while Operating, Ball Bearings, Balanced Heavy-duty Cutters, Enclosed Motor, many other features fully described in New Bulletin 42-FC.

F. J. STOKES MACHINE COMPANY
6004 Tabor Road Olney P. O. Phila., Pa.

F.J.Stokes FJS Est 1895

Obituary

Charles Cheney, 75, former chairman of the board of Cheney Bros., Manchester, Conn., died April 11 at his home in that place. He was born in Hartford, Conn., and was educated at the Massachusetts Institute of Technology. He joined the Cheney organization in 1887 and later became president and chairman. He retired in 1932. Mr. Cheney was one of the first manufacturers in this country to weave parachute cloth. Long active in industry affairs, he was president of the former Silk Association of America for eight years. He also had served as chairman of the Conference Board.

J. Lander Gray, Sr., 62, died suddenly at his office in Lowell, N. C., Apr. 22. Mr. Gray was the son of George A. Gray, Gaston County pioneer cotton manufacturer, and throughout his life had been prominently identified with the cotton textile industry, both in North Carolina and other southern States. At the time of his death he was president of the Norlina Cotton Mills, Lowell, and had led the field in development of fancy, nubbed, and boucle yarns for the knitting trade. Previous to the establishment of the Norlina Cotton Mills, Mr. Gray had been vice-president and general superintendent of Textiles-Inc., Gastonia, N. C. Around 1900 he was superintendent of Avon Mills, the second textile plant to be built in Gastonia. From 1906 to 1912 he was superintendent of Gray Mfg. Co. of which his father was president.

Wm. Lander Campbell, 85, Salisbury, N. C., who with associates organized the Rowan Cotton Mills in 1919, and from its opening served as superintendent until 1935 died April 5. He also, with associates, had operated the old Vance Cotton Mills prior to 1919.

C. C. Stokes, 58, secretary and treasurer for 20 years of Cheraw (S. C.) Cotton Mills, died April 8 in McColl, S. C.

Jack Kugelman, 50, president of Artcraft Silk Hosiery Mills, Philadelphia, died April 20. He founded the mills 20 years ago.

Robert A. Carter, 63, sales manager in the Reading, Pa., district for E. I. du Pont de Nemours & Co., dyestuffs department, died recently.

George F. Dickson, 55, president and general manager of Minneapolis (Minn.) Knitting Works, died suddenly May 1. He joined the organization in 1912 and became president a year ago. He was a former President of the National Association of Hosiery Manufacturers.

Robert Schey, 65, for many years an outstanding textile designer, died at his home in New York, May 4. Born in Vienna, he came to this country about 45 years ago.

Horace A. Riviere, 54, vice-president of the Textile Workers Union of America (CIO), died in Boston last month.

James Wesley Daniel, 75, secretary of Sterling Cotton Mills, Raleigh, N. C., for 46 years, died recently.

T. Cicero Andrews, 61, for many years superintendent of the weaving room of E. M. Holt Plaid Mills, Burlington, N. C., with which he was associated for 37 years until his retirement in 1940, died April 10.

Roy Perry, 48, Charlotte, N. C., for many years engaged in the textile machinery business, associated with the Aldrich Machine Works, died recently.

Ernest B. Dane, 73, president of Earnshaw Knitting Co., Newton, Mass., and prominent in banking, insurance and utility circles in Massachusetts, died at Center Harbor, N. H., on April 5.

Emanuel May, Sr., 60, associated with May Hosiery Mills, Burlington, N. C., for 26 years, died April 13.

Enoch Blair Rice, 62, president and treasurer of Blair Mills, Belton, S. C., which he organized in 1916, died April 18.

Charles H. Raynar, 75, former superintendent of Weidemann Silk Dyeing Co., Paterson, died recently.

George A. Weir, 71, formerly superintendent of the National Silk Dyeing & Printing Co., Paterson, N. J., died recently.

Mortimer R. Goldsmith, 59, vice-president of Hess-Goldsmith Silk Co., Wilkes-Barre, Pa., died March 24.

J. T. Stephenson, 82, for many years southern sales manager of Cortcelli Silk Co., died April 10 in Atlanta, Ga.

A Recent Installation of Four SARGENT STOCK DRYERS
in a Progressive New England Worsted Mill

A Production Problem Solved -

• • • THIS IS THE IMPORTANT FACT!

Advantages of this modern installation

— Stock dried at lower temperatures — The use of low pressure steam
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— Costly repairs and breakdowns eliminated — A better product

Why not let SARGENT solve your Drying troubles ?

Important Defense Items by SARGENT	Machines for Smokeless Powder Plants • Machines for Synthetic Rubber Plants • Textile Machinery for the manufacture of uniforms • Machined parts for large caliber guns

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Graniteville, Massachusetts, U.S.A.

RYERSON CERTIFIED STEELS

Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

THE TERRELL CLEANING AND HANDLING SYSTEM

The improved TYPE K stripper, Automatic Bobbin Box Hoist and Conveyor Elevator—a modern, compact system for increasing the efficiency and lowering the cost of bobbin cleaning and handling.

The Terrell Machine Co., Inc.
CHARLOTTE, N. C.

James F. Notman, Needham, Mass. . . . . N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J. . . Penn., N. Y. and N. J.
W. J. Westaway Co., Ltd., Hamilton & Montreal . . . . . Canada
Geo. Thomas & Co., Manchester, Eng. . . . . European Agent

TEXTILE MILL NEWS

Cotton Mill News

American Thread Co. has added a third shift to set up an around-the-clock operating schedule in its plant at Holyoke, Mass. The significant feature of this is the fact that women are working on this third shift from 10 in the evening until 6 in the morning, a condition not permitted in Massachusetts for at least a generation. The Massachusetts Commissioner of Labor granted permission for this extension because of war emergency.

Atlantic Cotton Mills, Macon, Ga., have completed installation of additional equipment, including 28 new Universal winders and accessory equipment. New units will be placed in service at once.

Bagpipe Mills, Inc., Laurinburg, N. C., recently chartered with capital of $100,000, previously reported, has taken over a one-story building, previously used for warehouse, and will remodel and equip for cotton yarn production.

Bibb Mfg. Co., Macon, Ga., has had to widen its main gate in order to take care of the record volume of shipping under its war-time schedule.

Bonham (Tex.) Cotton Mills are completing an expansion program under way for several weeks, including installation of 39 new looms and accessory equipment.

California Cotton Mills Co. reports net profit for 1941 of $344,897 against net loss of $38,986 in previous year.

Cannon Mills report net profit for 1941 of $3,123,080 on sales of $65,151,913, compared with $3,813,857 for 1940 on sales of $47,497,623.

Cliffside Mills, Avondale, N. C., unit, have completed construction of an addition in which a new Sanforizing machine has been installed.

Dwight Mill, Somersworth, N. H., built about 20 years ago at a cost of $5,000,000, and reputed to be the longest textile mill under one roof in the world, is being remodelled for use of the Portsmouth Navy Yard.

Flax Industries, Ltd., Drummondville, Que., have installed machinery in their new building and are in production on fine count linen yarns. General manager of the new concern is J. W. Yaxley, manager of Drummondville Cotton Co., Ltd.

Granby Elastic Web of Canada, Ltd., Granby, Que., has installed new humidification equipment in the warping and twisting departments. Installation consists of the latest type Westaway self-cleaning atomizer heads.

Highland Mills, Griffin, Ga., has awarded contract to Newton Coal & Lumber Co., for construction of one section of warehouse 50x100 ft. and an addition to the opener room 30x100 ft.

Horne-Johnson Mills, Mocksville, N. C., has recently been purchased by M. H. Murray and G. D. Drum of Maiden, N. C.

Kendall Co. reports net profit of $1,150,209 for 1941 on sales of $39,888,685 compared with $869,834 in 1940 on sales of $25,459,650.

Linwood Cotton Mills have been organized by officials of S. Liebovitz & Sons, Inc., New York, N. Y., manufacturers of men's shirts, to operate former No. 2 mill of Exposition Cotton Mills, Lafayette, Ga., recently acquired. Plant will be operated for manufacture of cotton fabrics for shirtings.

Maverick Mills, East Boston, Mass., has completed a 1-story addition to the boiler plant 33x55 ft. T. H. Whittredge, West Lynn, Mass., has the general contract. Estimated cost $5,000.

Mercury Mill, Charlotte, N. C., an affiliate of the Martel Mills Corp., Asheville, N. C., has shipped to the latter plant more than 250 looms, most of which are now in operation at the Martel plant.

Merrimack Mfg. Co. reports net profit for 1941 of $1,404,307, compared with $814,716 for 1940. Net sales for 1941 were $11,880,259, a 52% rise from the $7,790,380 figure in 1940.

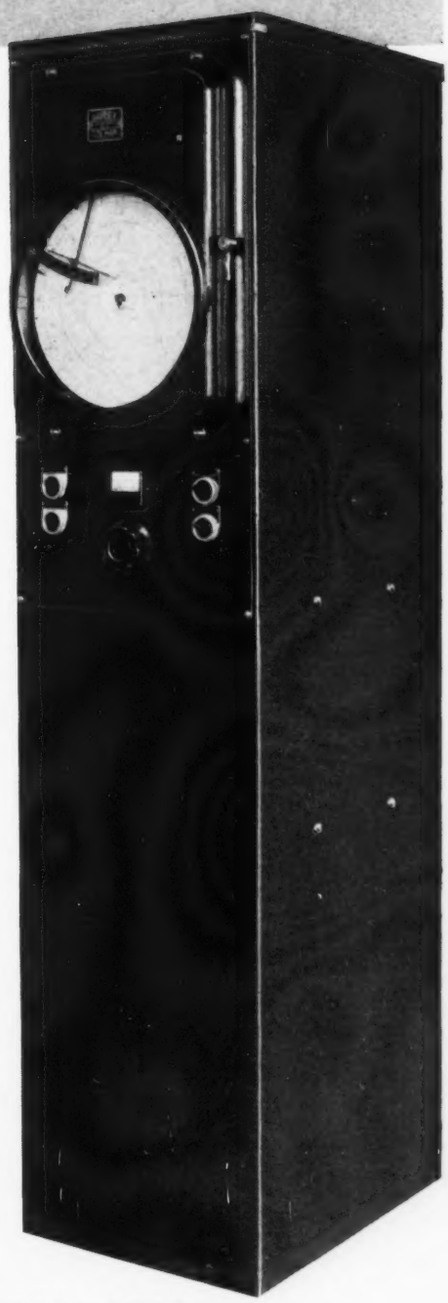
Northwest Flax Products Co., Eugene, Ore., recently organized, has plans maturing for new flax processing mill at Irving, near Eugene, consisting of several one-story units for scrutching, tank units, etc., estimated to cost close to $100,000, including equipment.

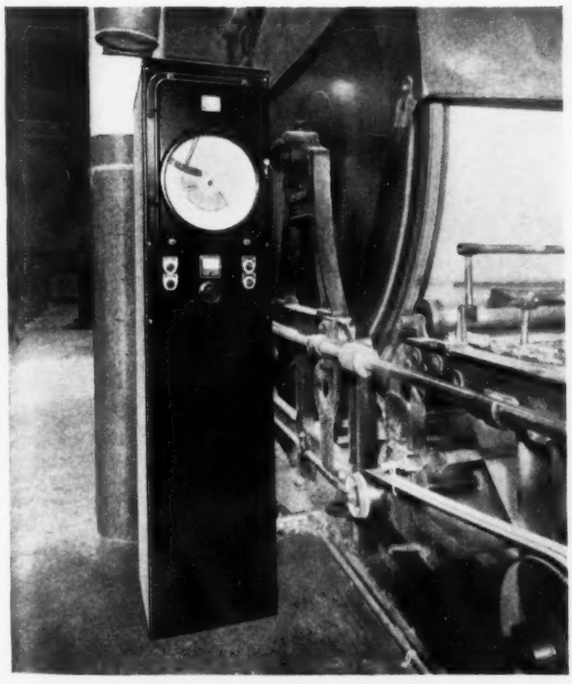
Riverside & Dan River Cotton Mills, Danville, Va., have completed the installation of Mount Hope swing guiders. The company is recruiting a large number of women for employment at mill, to take the place of men entering the army or navy.

Compensates for the variables In Slashing . . .

BARBER-COLMAN MOISTURE CONTENT CONTROLLER

Some of the variables which affect the moisture content in warps are (1) Variable moisture content of material entering dryer, (2) Processing and storage faults, (3) Faulty equipment, (4) Improper machine adjustments, (5) Variations in driving motor speed, (6) Variable size level, (7) Variable size temperature, and (8) Variable cylinder temperature. An installation of Barber-Colman controls will compensate for these variables and permit maximum production of uniform and highest quality. The Barber-Colman Moisture Content Controller will allow the slasher to be operated at maximum temperature and therefore at the highest speed possible to produce the greatest yardage with a constant moisture content.





TYPICAL INSTALLATION...

The illustration at the left shows one of the Barber-Colman Moisture Content Controllers installed on a battery of nine slashers in a well-known New England cotton mill, where it is instrumental in maintaining uniform quality of high-grade sheeting and other products.

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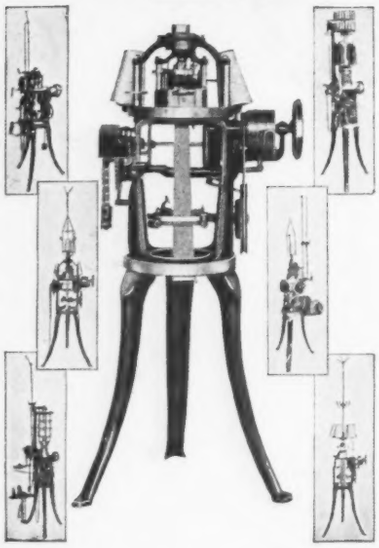
ALL TRUE-RIB



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Give You Flexibility to meet change in Production and Style Trends

Meet the growing demand for anklets, slack sox, half hose, etc., with minimum change-over.

FIDELITY Universal Ribbers give you nearly unlimited range of stitch and style, produce True-Rib tops with an elastic-knitted construction—short hose cling snugly, fit better.

Five Types of interchangeable head, eleven important attachments, automatic stop motion, single- or two-speed drive and improved centre bobbin table are a few of the advantages that help FIDELITY Universal Ribbers speed your change-over.

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TEXTILE MILL NEWS

Santee Mills, Orangeburg, S. C., have completed installation of a Cocker high-speed warper and new Abbott winders.

Statesville (N. C.) **Narrow Fabrics Co.,** recently organized, has begun operations in a local mill and will step up production to maximum basis at early date. J. M. Sherrill is manager.

Union-Buffalo Mills Co. reports net profit for year ended Sept. 30, 1941, of $1,118,007, compared with $273,405 for previous fiscal year.

Vanco Mills, Henderson, N. C., was sold at auction in mid-April for $22,500 to L. M. Bullock. The mill had cost $150,000, it was said, and it was believed that another sale would be ordered.

Victory Textiles, Greer, S. C., formerly Franklin Mills, has been issued a charter with a capitalization of $40,000. Directors of the company are: R. C. McCall, J. W. Norwood, Jr., W. E. Thompson, and J. J. Kauffman, Jr., all of Greenville, S. C. Walter B. Greer is plant superintendent, and the company manufactures gauze for surgical dressings.

Warrior Mills, Spartanburg, S. C., recently organized for manufacture of duck, will occupy a vacant building in Spartanburg, will operate approximately 125 old looms salvaged from nearby plants, and will use excess cotton yarn from one of the rubber companies.

Wortendyke Mfg. Co., Richmond, Va., following liquidation of King Cotton Mills Corp., is now operating 50 looms on army duck.

Wool Mill News

Belmont Woolen Yarn Co., Woonsocket, R. I., suffered $125,000 damage to buildings and machinery in a fire on April 18 started by lightning.

Bigelow-Sanford Carpet Co., Inc., Amsterdam, N. Y., has closed its weaving department for an indefinite period, due to recent restrictions on use of jute. About 1700 employes are affected.

Broad Brook (Conn.) **Co.** has work under way on one-story addition to filter plant at mill, 23x65 ft., for which general contract was let recently to H. Wales Lines Co., Meriden, Conn. Cost reported close to $25,000, with equipment.

Chicago (Ill.) **Felt Works,** 4115 West Ogden Ave., has awarded general contract to W. J. Scown Building Co., for new one-story mill, about 90x121 ft.

Chesley (Ontario) **Woolen Mills** were burned to the ground when struck recently by lightning. It is uncertain as yet if they will be replaced.

Collins & Aikman Corp. report net profit for year ended Feb. 28, 1942, of $800,951, against $3,105,170 for previous fiscal year.

Firth Carpet Co., Auburn, N. Y., is converting a large part of looms and other facilities at local mill for the production of materials for Government. Carpet manufacture will be curtailed. Similar conversion is being carried out at other mills of company.

Glenside Mills Corp., Skaneateles Falls, N. Y., unable to fulfill plan to pay off 100%, will be liquidated. Every effort is being made to dispose of the property as a going unit.

Hirst-Roger Carpet Mills, North Wales, Pa., had its machinery sold at auction on May 5.

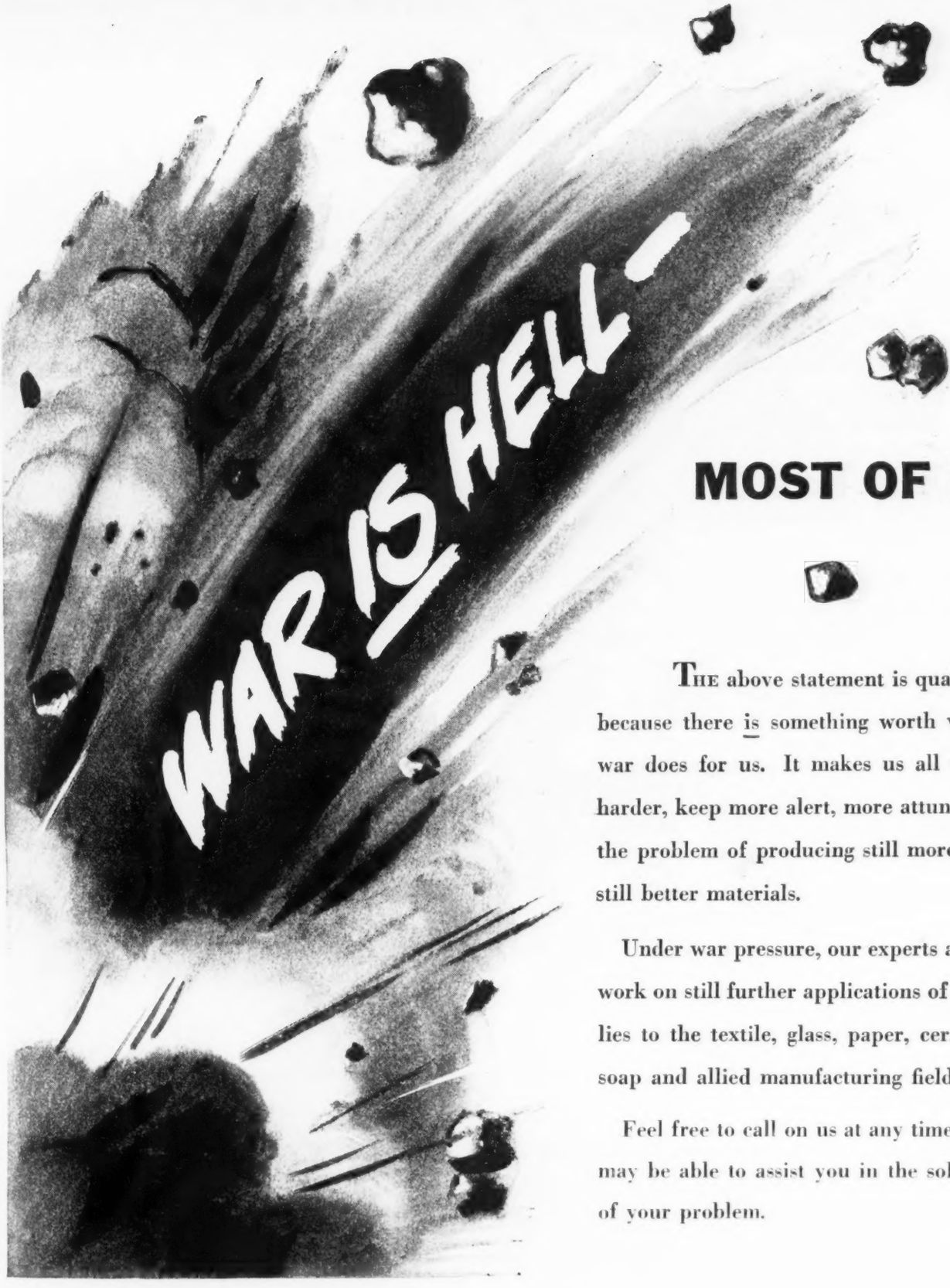
Joseph C. O'Connell Co., Taunton, Mass., manufacturer of wool tops, has moved to Taunton from New Bedford, Mass. The company has been incorporated and plans to double its production in the near future.

Rumpel Felt Co., Ltd., Kitchener, Ont., is having a one story mill addition erected to its plant. Size of the new building is 40x50 ft.; estimated cost, $7,000.

Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has work under way on installation of 75 new looms and auxiliary equipment for weaving blankets, and will give over large part of mill for this production for Army service. Company also has acquired a quantity of finishing equipment for handling blanket fabrics and will place in service in near future. Mill has been manufacturing duck for war orders for some time, using duck looms installed for this purpose, as well as a number of converted carpet looms.

Stillwater Worsted Co., Harrisville, R. I., has work underway on one-story additions 38x48 ft. and 16x48 ft. of mill construction. Arthur Vick, Providence, has the general contract.

John Walther Fabrics, Inc., Castor and Kensington Aves., Philadelphia, Pa., woolen and worsted fabrics, have leased space in four-story industrial building at D and Ontario Sts., about 20,000 sq. ft. of floor area, and will occupy for expansion.



MOST OF IT

THE above statement is qualified because there is something worth while war does for us. It makes us all work harder, keep more alert, more attuned to the problem of producing still more and still better materials.

Under war pressure, our experts are at work on still further applications of alkalies to the textile, glass, paper, ceramic, soap and allied manufacturing fields.

Feel free to call on us at any time. We may be able to assist you in the solution of your problem.

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★ IMPROVES FULLING AND SCOURING
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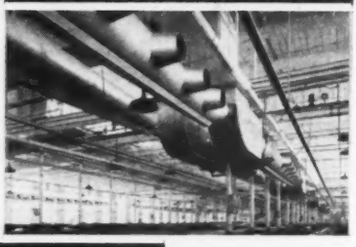
ENGINEERS — EQUIPMENT
FOR THE TEXTILE INDUSTRY



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AIR CONDITIONING ENGINEERS
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For 25 years we have been successfully solving the air-conditioning problems of the Textile Industry.

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STANDARD OF THE WORLD

TEXTILE MILL NEWS

Wanskuck Co., Providence, R. I., is building a two-story elevator shaft at its plant on Weld street and a one-story top addition. Rowley Construction Co., Pawtucket, is doing the work. Cost $10,000.

Wilton (Me.) Woolen Co. is making additions and improvements in power plant, including installation of a new Bigelow boiler and auxiliary equipment, providing considerable increased capacity. Plant is being converted to use coal as fuel in future.

Wool Processing Corp. of America, Inc., St. Louis, Mo., recently organized, care of B. L. Liberman, 1414 Ambassador Bldg., representative, plans operation of a mill at early date.

Woonsocket (R. I.) Spinning Co. has taken out permit for one-story addition, 42x87 ft., for warehouse service, and will proceed with superstructure at once.

Rayon & Silk Mill News

Air Chutes, Inc., Reading, Pa., capitalized at $100,000 to manufacture and sell parachutes, has applied for a corporation charter. Headquarters are at 18 South Fifth Street.

American Enka Corp. reports net profit of $1,771,648 for 1941, compared with $1,905,231 for 1940. Sales were up 11%.

American Velvet Co., Stonington, Conn., has purchased 80 looms for weaving cotton duck. Machinery was bought from a New Hampshire plant.

Bristol (Tenn.) Weaving Corp. plans one-story addition for expansion in weaving department, with installation to include about 50 new looms and auxiliary equipment. Company is a subsidiary of Burlington (N.C.) Mills Corp.

Canadian Celanese, Ltd., Drummondville, Que., plans large expansion in mill, including new production units and additional machinery.

Celanese Corp. of America, Inc., New York, N. Y., is said to have plans under way for five-story and basement mill on site in New Jersey (exact location withheld), to be used for production of materials for war service (specific character similarly withheld). Entire output will be used by Government. Project is reported to cost in excess of $500,000, with equipment, financing to be provided by Defense Plant Corp., Washington, D. C.

Cheney Brothers, Manchester, Conn., are discontinuing manufacture of plain and printed flat dress goods for duration of the war.

Duff Looms, Inc., Morganton, N. C., a recently organized concern, is now in operation manufacturing draperies and upholstery fabrics. The officers of the company are C. H. Ross, president and treasurer, and J. M. Gayle, superintendent.

Imperial Rayon Corp., Gloucester City, N. J., the successor to the Furness Rayon Co., ceased commercial operation May 1 because its equipment had been sold at a Mexican organization for $125,000. Imperial will continue its corporate existence to license the manufacture of cuprammonium rayon by continuous process under its patents and to maintain a laboratory under direction of P. E. Harrison. The 858 spindles will be operating in Mexico by Aug. 1.

Monroe Mills, Monroeville, Ala., have completed addition to its silk plant which will house the shipping department. The part of the mill which formerly housed this department, will be used for additional production machinery.

Productora de Artisela, S. A., Mexico is a new rayon plant located at San Angel Inn, a suburb of Mexico City. Giovanni Naselli is president and general manager. E. C. Dunham, formerly with Hampton Co., Easthampton, Mass., is director general of the plant. About 25% of the equipment comes from the Hampton Co. Daily capacity is set at 5,000 lb. Production will begin in June.

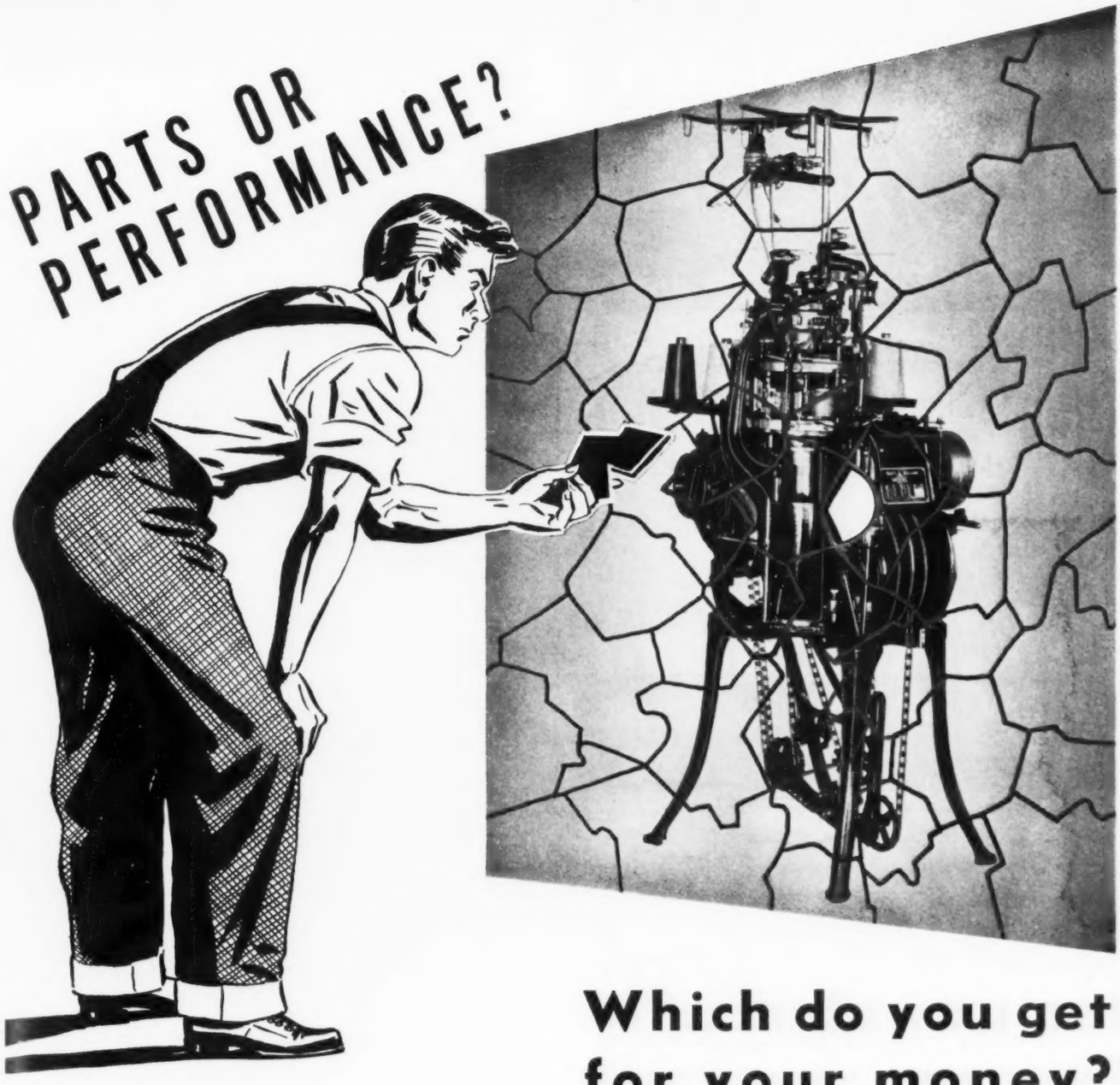
Southampton Textile Co., Emporia, Va., which recently purchased local mill of Meherrin Mills, has been chartered with capital of $50,000. New company will specialize in cotton and rayon fabrics. Edward P. Hullings, head of Northampton Textile Co., Mount Mount Holly, N. J., is president of new organization.

Knitting Mill News

Arlington Hosiery Mills, Inc., 2242-50 East Venango St., Philadelphia, Pa. — One-story mill of this company at location noted, totaling 10,000 sq. ft. of floor space, has been purchased by C. A. Spaulding and associates, and will be used for another line of production in future.

B. G. & D. Hosiery Co., Petersburg, Va., was subject of attachment by U. S. Marshals in a summary judgment against the company in a suit by employees for back wages.

PARTS OR PERFORMANCE?



Which do you get for your money?

Increased percentages of rejects . . . *decreased* output . . . what a price to pay for repairs made with cheap substitute knitting machine parts! Of course, you may save a few dollars at the time . . . but what happens when the machines begin to roll again is the real test of your money's worth.

Actually, you will find you can't afford anything but genuine S & W factory-made part replacements. Your Scott & Williams knitting machines are highly complex, precision engineered and built. All the important design, metallurgical, tooling and other factors that have gone into making each S & W part exactly right for its particular job are too much for you to expect your local machinist to be able to duplicate. Most of the 55,400 different S & W standard part replacements can be sent promptly on receipt of your order. However, due to the national emergency, we suggest that you keep on hand at least a minimum stock of more likely part replacements. Teletype service is FREE from our High Point and New York Offices.

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Produce Filling of maximum yardage in Cop, Butt and Bobbin form for plain or automatic looms at minimum operating cost and maintenance.

Send us a small supply of your yarn for Test-Wind Report and Catalog.

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TEXTILE MILL NEWS

Boiling Springs (N. C.) **Hosiery Mill** plant has been sold to R. J. Woods, owner of the Buffalo Mills, Shelby, N. C.

Buffalo Knitting Mills, Pen Argyl, Pa., has acquired property in Applegate Ave., on which it will build a 1-story brick, steel and concrete plant, 100x100 ft., to cost more than $60,000 with equipment.

Cape Charles (Va.) **Knitting Mills** have discontinued operations, and machinery and equipment in mill has been sold.

Carroll Silk Hosiery Mills, Inc., Hillsville, Va., have been acquired by Jack Kahn, Stephen Lewis and George Murphy, all of New York, N. Y. Operations will be continued as in the past. Company is being reorganized with Mr. Kahn as president; L. E. Frye, superintendent at mill, vice-president in charge of production; Mr. Lewis, secretary; and Mr. Murphy, treasurer.

Elliot Knitting Mills, Inc., Catawba, N. C., have recently built an addition and installed new equipment in the finishing department.

Ellis Hosiery Mills, Hickory, N. C., have completed an expansion program primarily to provide facilities for manufacture for the Government, including installation of 30 special knitting machines, new dyehouse equipment and auxiliary apparatus. A new one-story addition has been erected for extensions in warehouse. A large part of output is half-hose for Navy.

Headland (Ala.) **Hosiery Mills** have installed two rebuilt 45-gauge full-fashioned machines, formerly used by Archer Hosiery Mills, Columbus, Ga.

Interstate Hosiery Mills, Albany, Ga., recently completed the installation of eight additional 45-gauge full-fashioned knitting machines.

Little Hosiery Mill, South Pittsburg, Tenn., a branch unit of the Spalding Knitting Mills, Griffin, Ga., plans to install additional looping machines.

Manchester (N. H.) **Knitted Fashions, Inc.,** have taken space in the No. 11 mill of Amoskeag Industries, Inc., and hope eventually to employ 1,200. Company is headed by Mack Kahn, New York. Production will be sweaters and bathing suits. Benj. Mates will be operating head.

Mauney Mills, Kings Mountain, N. C., have erected a new hosiery plant with weekly capacity of 4,000 doz. prs. Small scale manufacturing of men's socks has been in progress for some time, but full time production will increase the output more than four times.

Moorhead Knitting Co., Harrisburg, Pa.—Sale of equipment of this company, appraised at $98,736, for $68,000, has been approved by Federal Judge Albert W. Johnson, at Scranton (Pa.) Federal Court.

Philadelphia (Pa.) **Knit Goods Co.,** 15 South Third St., has leased the fourth floor in building at 20-22 North Third St., and will occupy for expansion.

Rosedale Ordnance Corp., Laureldale, Pa., capitalized at $100,000, has been incorporated by Charles Chipman, Easton, Pa., secretary-treasurer of Rosedale Knitting Mills; Ray Borda vice-president and superintendent of Rosedale mills and Harry Lee and William R. Lessig Jr., Reading attorneys. Offices will be at Marion and Vine Sts., and the company will use Rosedale Knitting Mill buildings for its operations.

Sheer Silk Hosiery Mills, Ltd., Sherbrooke, Que., have not suffered a fire loss, as inferred in this column last month.

Processing Plant News

Chadwick Screen Printing Co., Inc., Paterson, N. J., recently organized, has leased local industrial building at 61 Keen St., and will improve and equip at once for new print and dye works. Initial installation will include four tables and auxiliary equipment. New company is headed by Albert Uberti, formerly one of owners of General Piece Dye Works, Inc., Paterson.

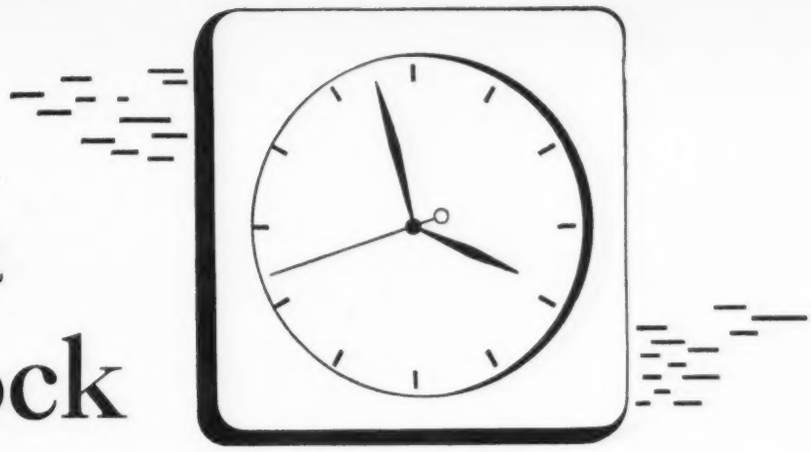
Franklin Process Co., Philadelphia, Pa., has leased third floor in Aberle Mill No. 1, A and Clearified Sts., totaling 15,600 sq. ft. of floor space, and will use for warehouse.

H. B. Newton & Co., Philadelphia, Pa., have leased a floor in building of Ontario Dye Works, D and Ontario Sts., and will occupy for expansion.

Ranger Corp., R. D. 1-A, Walpole, Mass., recently chartered with capital of 100 shares of stock, plans early operation of local dyeing and finishing mill. B. Miller is president; and B. Powers, 406 Pleasant St., Malden, Mass., treasurer.

Rock Hill (S. C.) **Printing & Finishing Co.** has closed its engraving department for the duration of the war. This move was made necessary because of the lack of copper for engraving.

This is a Clock



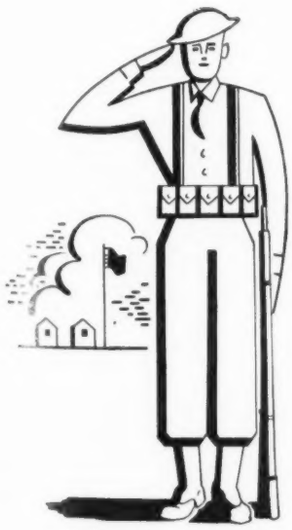
That relentlessly ticks off the seconds—minutes—hours —that mean *speed, speed, speed* in America's war effort.

This is a drop of Yarmor* 302-W Pine Oil

That is making each second count in key textile processing operations. It is cutting fulling time as much as 30%, besides doing an efficient job in kier boiling and as a dye assistant.

This is a Hercules Chemist

Who is backing up America's war effort by developing new, improved chemical materials—who, besides developing Yarmor 302-W, has just succeeded in producing synthetic pine oil, to help produce many more yards of cloth, many more minutes faster than ever before.



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Addenda to Textile War Manual

(*Continued from page* 64)
importing bag manufacturer to import burlap should he be in a position to do so.

Chlorine—In order to meet war needs, it has been necessary to cut the supply of chlorine to civilians. The main effect of curtailing civilian supplies will be on clothes. Textile manufacturers' supply is cut to one-half of their usual amount.

Cordage—In Amendment No. 5 to order M-36, manufacturers of manila fiber cordage need not include sales quotas, defense orders placed and ready for delivery prior to March 2, 1942. This does not apply to orders which could not be delivered by March 2 for reasons beyond the control of the manufacturer.

Imported clothing for men and boys, as well as domestic production, sold or delivered in this country after May 30, 1942, must comply with the restrictions of the WPB except for clothing put into the process of manufacture before May 30. Second-hand clothing is excepted. Imports were not previously covered.

Jute—Due to the present jute shortage and the improbability of obtaining additional supplies from Calcutta, further allocation of jute yarns for floor coverings after this month is unlikely, the Soft Fiber Section of WPB said. The jute shortage warning was issued to prevent manufacturers from beginning production on rugs and carpets they might not be able to finish for lack of jute.

Uniforms and Fire Hose may not be ordered with a preference rating assigned under the terms of the Repair, Maintenance and Operating Supplies Order, P-100, says DIO in an official interpretation issued April 16. Interpretation No. 3 of the order excluded uniforms for employees, material for uniforms, and fire hose from the definition of "Operating Supplies" to which an A-10 preference rating may be assigned by companies covered by the Order.

Rayon—Worsted mills are advised that rayon cut staple set aside for March and April has not been exhausted, since certain users failed to take up their allotments. Excess quantity may be allocated to those mills which can put it into process before May 1.

Rayon Yarn—The WPB is expecting to crack down with increasing severity on firms disposing of rayon yarn in its original state, allocated to them for processing, to others not entitled to delivery under the terms of Supplementary Order M-37-A or M-37-C. Two firms have already been banned for two and one-half months from allocation of materials covered by WPB orders.

Rubber Yarn—In an amendment to Conservation Order M-124, elastic-thread knitters, weavers and other users are permitted to knit, weave or otherwise use rubber yarn which, prior to March 29, had been placed on a knitting machine, braider or loom, or which had been removed from the vendor's containers, wrapping, packing, or "put-up" and placed on quills, cones, cops, spools, bobbins, tubes, beams or warps.

Wool—Manufacturers were ordered by the WPB to stop putting wool into process after 11:59 p.m., April 17, in the manufacture of floor coverings and drapery and upholstery fabrics except to fill Army, Navy and Maritime Commission orders. This does not mean that the civilian production of rugs, carpets, and wool drapery and upholstery material will be stopped at this time, since all the mills have wool in process of production which they will be permitted to run through. A study will be made at once to ascertain what part of the carpet wool now in possession of the industry can be used for military or essential civilian purposes. It is proposed to reserve all suitable wool for those purposes exclusively, with consideration given to releasing the remaining carpet wool for rugs, carpets and drapery and upholstery material. The action is in the form of an amendment No. 4 to the Wool Conservation Order M-73, replacing the second quarter carpet-wool allocation.

Wool, Blends—WPB on April 4 sent letters to all woolen manufacturers advising them to submit estimates, before April 30, of their blending programs for the third and fourth quarters of 1942 showing the maximum yardage of satisfactory fabrics they will be able to produce with the minimum amount of new wool, after taking care of Government contracts.

Elastic Fabric—WPB issued Order L-90, April 23, reducing by approximately 50% the amount of elastic fabric that may be used in women's foundation garments. The Apparel Section of WPB estimates that the order will double the number of garments which can be made from available elastic fabric. Production from present stocks is expected to be extended eight or nine months. Retail stores have large stocks of garments on hand.

Textile Machinery—Under General Limitation Order L-83, effective April 10, manufacturers are prohibited from filling any orders for the production or delivery of certain types of new, second-hand or reconditioned machinery unless they bear WPB approval. Approved orders include those for the Army and Navy, certain other Government agencies, the Governments of the United Nations, Lend-Lease operations, construction or expansion of buildings (other than housing) for war or essential civilian use, and any orders bearing an A-9 or higher preference rating issued at any time on an original PD-1, PD-1A, or P-19h certificate or on a PD-3 or PD3-A certificate countersigned before April 10. Machinery covered by the order includes all types of textile machinery and equipment.

Substitutes

A REVISED PROVISIONAL LIST of materials arranged in three groups according to their availability for civilian use were issued by WPB on April 17. Textile materials appearing on the list are given below:

Group 1. Materials most vitally needed for war purposes and not generally available for civilian needs: Burlap, Cotton Linters, Cotton Duck, Hemp (Agave Fiber, Manila Fiber, Cordage, Kapok, Nylon, Shearlings, Silk (Raw, Noils, Garnetted, Reclaimed).

Group 2. Basic materials that are essential to war industries, but whose supply is not so critically limited as materials of Group 1: Rayon, Cotton (raw, long staple), Henequen, Jute, Sisal, Vulcanized Fiber, Wool.

Group 3. Materials available in significant quantities for other than strictly war purposes. However, the use may be restricted by accompanying manufacturing limitations. Restrictions are commonly imposed, but supplies are not critically short, except in the case of iron and steel: Cotton (raw).

keep your equipment on the job with this FSL maintenance program

Today, the big job is to keep present equipment running at full capacity. To help you, Westinghouse has planned this F S L Wartime Maintenance Program. Put to work in your plant it means:

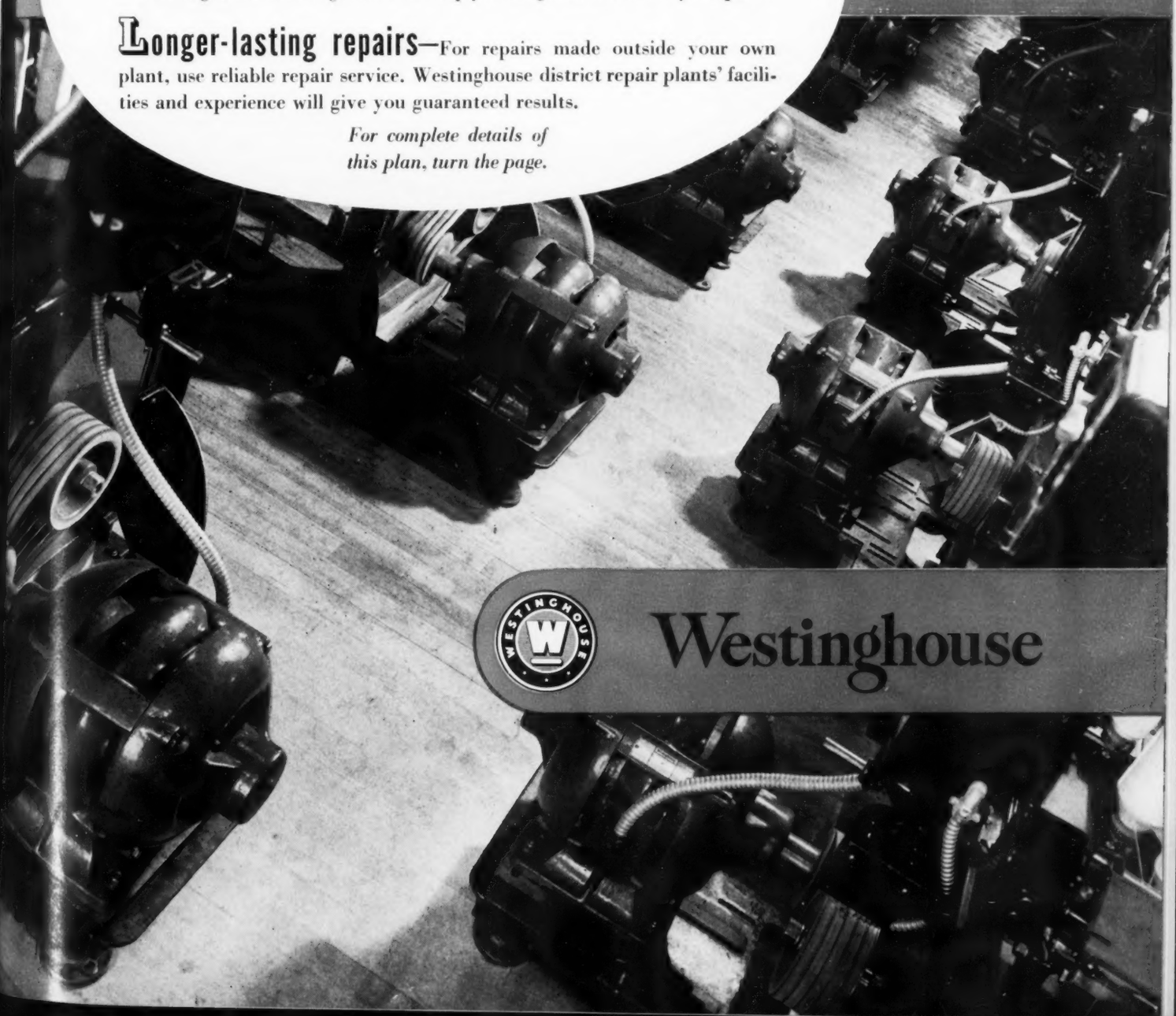
Fewer repairs—Fewer repairs will result from regular inspections, adequate maintenance records and trained maintenance men. Westinghouse is ready to supply you with helpful literature for this purpose.

Shorter repairs—Where repairs are made in your own plant, an adequate stock of renewal parts will shorten repair time. Recondition worn equipment promptly.

Westinghouse field engineers can help you diagnose trouble in your plant.

Longer-lasting repairs—For repairs made outside your own plant, use reliable repair service. Westinghouse district repair plants' facilities and experience will give you guaranteed results.

For complete details of this plan, turn the page.



Westinghouse

the FSL maintenance

One of the most important steps to better maintenance is proper training of new maintenance men. Plan your training program immediately.

There are many ways of keeping maintenance records. The important thing is to adopt one and be sure it is followed.

Regular inspections assure fewer repairs.

Fewer repairs

Insist upon regular inspections. By increasing the frequency of inspections, you can decrease major repair work. Minor repairs will be made before serious trouble can develop.

Keep adequate maintenance records. A maintenance record of every piece of equipment is essential to war production.

Train your maintenance men. Trained men mean better maintenance. A planned training program will improve your new maintenance personnel and keep production rolling. The educational literature illustrated on this page, supplied by Westinghouse, will help you educate maintenance men.

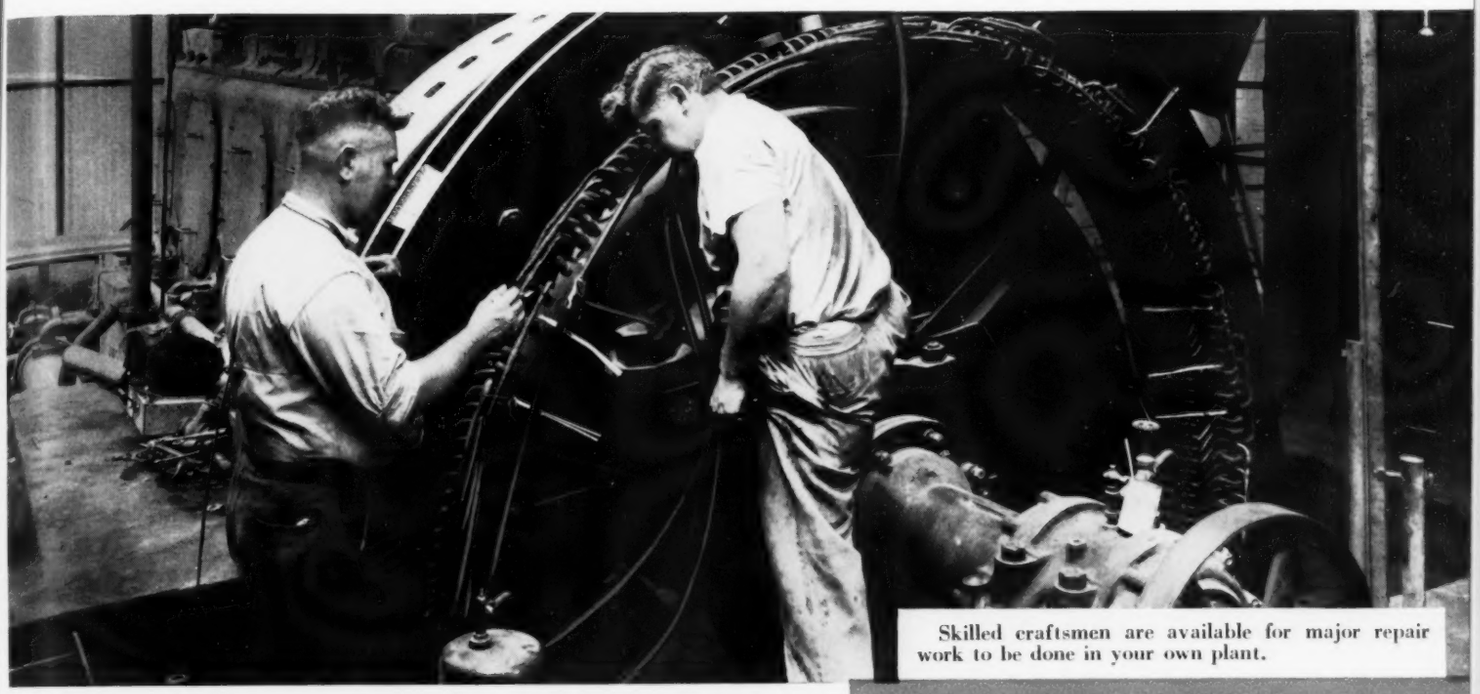
MAINTENANCE HINTS—A handbook of useful information about the care and repair of electrical equipment.

MAINTENANCE NEWS—A periodical that keeps maintenance men up to date on current methods.

CHECK CHART—Designed to keep your men reminded of the most frequently required maintenance operations on electrical equipment.

HUMAN INTEREST POSTERS—Machine operators should be cautioned to help keep equipment in good condition. To help you keep them reminded, Westinghouse offers, for posting on war bulletin boards, special "Bull-of-the-Woods" posters drawn by J. R. Williams, America's famous industrial cartoonist.

...rogram helps *Keep Equipment on the Job!*



Skilled craftsmen are available for major repair work to be done in your own plant.

Shorter repairs

CHECK YOUR QUANTITIES OF RENEWAL PARTS—By keeping adequate supplies of regularly used renewal parts you will be prepared to make immediate replacements. To supplement your own repair parts stocks, our district warehouses carry, ready for immediate delivery—ample stocks of those parts most subjected to wear.

CHECK YOUR RANGE OF RENEWAL PARTS—By stocking renewal parts for *more* equipment, more of your machines can be put back into service quicker.

CHECK THE CONDITION OF SPARE EQUIPMENT—Whenever equipment is taken out of service because of failure, have it reconditioned at once, renewing all burned or worn parts, and hold it in stock for future use. Have a survey made in your plant *now* of all old equipment.

USE WESTINGHOUSE "FIELD ENGINEERING AND SERVICE"—Westinghouse engineers are available to help diagnose trouble and arrange for needed repairs in your plant. Portable field equipment assures accurate results.

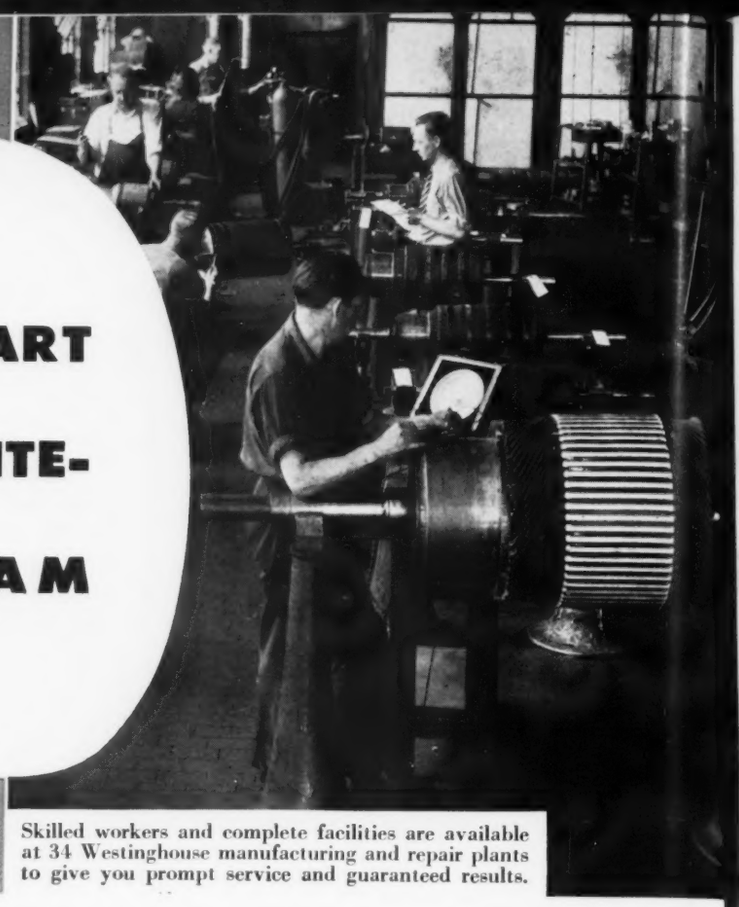
Check all worn equipment and recondition it at once. Minor repairs *now*, eliminate major ones later.

Stocks of renewal parts are at wartime capacity in each of 17 Westinghouse parts warehouses.

Westinghouse

AND FOR REPAIRS THAT LAST LONGER...

AN IMPORTANT PART OF THE FSL MAINTE-NANCE PROGRAM



Skilled workers and complete facilities are available at 34 Westinghouse manufacturing and repair plants to give you prompt service and guaranteed results.

Longer-lasting repairs

For repairs made outside of your plant, use the facilities of Westinghouse. You will gain these advantages:

Availability: There is a Westinghouse repair plant near you fully equipped to render fast dependable repair service when you need it.

Precision Equipment: Our repair plants are completely equipped with the most modern precision equipment for repair work. Equipment of this kind is seldom found in repair plants except those of the largest electrical manufacturers.

Proved Methods: The methods employed in all Westinghouse repair plants are the same as used in the manufacture of the original equipment.

Trained Men: All repairs are supervised by factory trained craftsmen with years of experience devoted exclusively to the manufacture and repair of steam and electrical equipment.

Accurate Testing: All repaired apparatus must measure up to rigid factory specifications. Results are assured by high frequency testing of coils, dynetric balancing, fatigue tests, etc.

Guaranteed Work: Because of these facilities and methods, Westinghouse can give you the same guarantee on repaired equipment that you get with all new Westinghouse equipment.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, EAST PITTSBURGH, PA.

Westinghouse Electric & Mfg. Company,
Maintenance Sales, Dept. 7-N,
East Pittsburgh, Pa.
Send sample copies of FSL Maintenance Program literature.

Name_____

Title_____

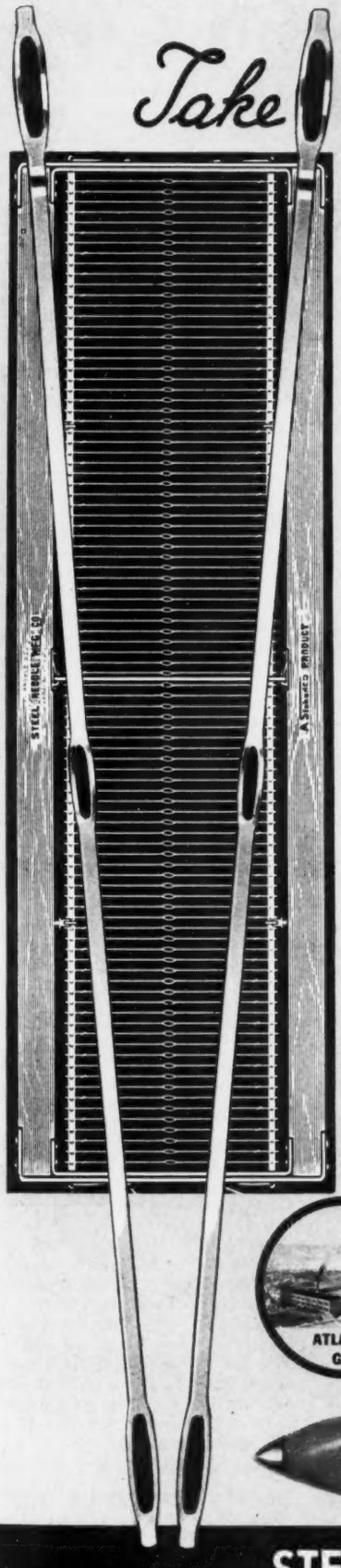
Company_____

Address_____

J-94495

The entire Westinghouse organization, including 17 parts warehouses and 34 repair plants, will help you put this F S L maintenance program to work in your plant. Fill in and mail the coupon NOW.

Westinghouse



Take Advantage of

OUR 4 LARGE PLANTS FOR THE DEFENSE OF YOUR GOVERNMENT CONTRACTS

Realizing the rigidity of Government specifications and the terrific time limits imposed,

STEEL HEDDLE MFG. CO.

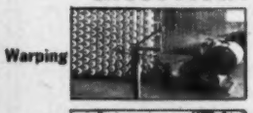
has increased the severity of their tests; testing each product, to the point where it will not only insure passing Government Inspection, and an uninterrupted production program, but could, if necessary, pass the most severe Government specifications required in this National Emergency.

For "all out aid to production," specify STEHEDCO Flat Steel Heddles—Harness Frames—all types of Loom Reeds—Tempered Dogwood Shuttles—and Loom Harness Accessories.

Prevent Wear—Rust and Corrosion by . . .

HARD CHROME TREATING

those Active, Exposed Metal Parts used in . . .


Warping

Roving

Spinning & Twisting

Winding

Weaving

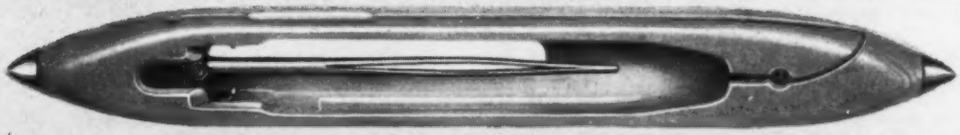
Slashing

ATLANTA GA.

GREENVILLE S. C.

MONTREAL Canada

PHILADELPHIA Pa.



BRANCH OFFICES ALL OVER THE WORLD

STEEL HEDDLE MFG. CO.

Manufacturers of Superior

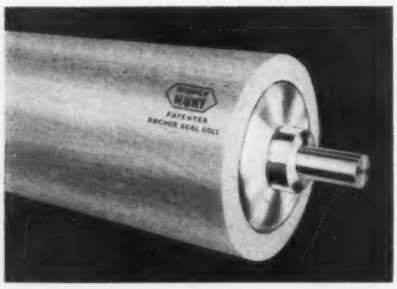
FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—TEMPERED DOGWOOD SHUTTLES—LOOM HARNESS ACCESSORIES

2100 W. Allegheny Avenue Philadelphia, Pa.

FIELD ENGINEERS IN EVERY DISTRICT

RODNEY HUNT NEWS

TEXTILE MACHINERY—WATER POWER EQUIPMENT—ROLLS AND REELS



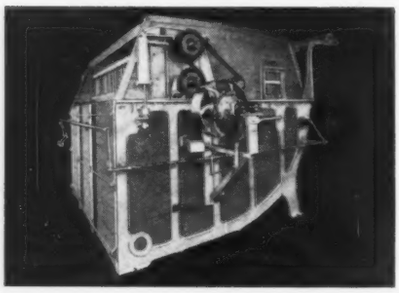
NEW "ANCHOR SEAL" ROLLS STRONGEST YET

The new "Anchor Seal" construction provides super-strength rolls for mangles, bleach house washers and other rolls having a large hub between the end and bearing. By eliminating wedges entirely, it prevents the end of the roll from splitting, a common trouble with ordinary mangle rolls. This new patented construction provides an "Anchor Seal" that is set into the end of the roll with a 150-ton press and which will stay there forever until the roll itself wears out. Many mills are sending back old style fittings for re-building into new rolls using the "Anchor Seal" construction.

Write for Bulletin

WASHERS WITH NEW PLASTIC TOPS

Pre-War Development Cuts Cost and Saves Material

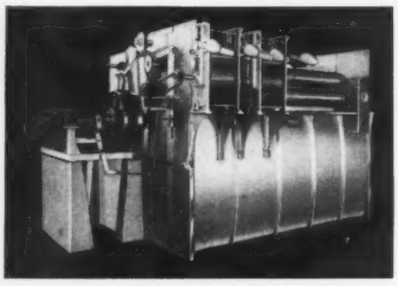


A pre-war Rodney Hunt development of a plastic top for "Yankee Clipper" Washers has proved of especial value in these times when every saving of vital materials takes on an added importance.

As shown in the cut, the old wood-and-cast-iron top of the "Yankee Clipper" Washer has been replaced with plastic. The improvement was originally made to provide a better and more economical construction and has proved highly successful. Today, with the added incentive of saving vital materials, this plastic top construction serves the customer and the country at the same time.

Write for Washer Catalog No. 340

NEW "SLACK LOOP" WASHERS GIVE ADDED PRODUCTION



Rodney Hunt "Slack Loop" Machine—two sections—one for dyeing and one for starching. Note patented "Curve-of-Strength" construction of tub sides.

Battery of 3 Units in Leading Mill Operate at Speed of 200 Yards Per Minute

A prominent lace curtain mill recently installed three "Slack Loop" stainless steel machines which are now operating at speeds up to 200 yards a minute. The first machine gives a chemical treatment, the second washes, and the third (shown at left) dyes and starches. This latter machine is really two machines in one. There are two sections—one for dyeing and one for starching. Heavy duty wringers prevent carry over of liquor from one compartment to another.

SAVE TIME AND MATERIALS BY RE-BUILDING OLD MACHINES

While Rodney Hunt has thus far been able to furnish new equipment to mills working on war orders with reasonably good deliveries, the present uncertainties as to materials may change the situation in the future. We therefore urge mills to consider re-building old machines if they are in a hurry to meet production schedules on government contract bids. Many times old machines can be modernized with new features and rebuilt to increase their speed and capacity. This can often be done in much less time than it would take to build and deliver a new machine.

Tell Us Your Problem!

WATER POWER REPAIRS ARE VITAL TODAY

Let Rodney Hunt help you put your water power equipment in shape for the duration. Many mills are operating their turbines at reduced efficiency. A recent customer got a 30% increase in power from the same amount of water after Rodney Hunt had re-conditioned their wheel. If you use water power, gates, hoists, or other water controlling equipment, we have specialists who can help you. Fortunately, such repairs usually do not use up critical materials in large quantities.

Write for Catalog WW40

For Catalogs, Prices, Etc., Write

RODNEY HUNT MACHINE CO.

66 Mill Street Orange, Mass, U. S. A.

RODNEY HUNT

What we're doing to help produce the best possible rayon hosiery from the yarns now available . . . .

AMERICA'S hosiery manufacturers can't wait. They need facts—need them now—in order to produce satisfactory rayon stockings.

That's why we have devoted a section of our Textile Unit, and a staff of skilled technicians, to an all-out drive on the hosiery problem. Here, we have made telling progress. For example, from this work has come Avconit No. 1, the new sizing material which has already gained widespread acceptance. Mill men are enthusiastic about Avconit. They tell us that it really makes high-twist rayon behave, that it cuts press-offs to a fraction.

4-PLY SERVICE *tackles the Hosiery Problem...*

1 **FIBER RESEARCH**—Helps you get the right yarns.
2 **FABRIC DEVELOPMENT**—Helps you design new fabrics.
3 **MILL TECHNIQUE**—Helps solve mill problems.
4 **SALES ASSISTANCE**—Helps sell finished fabrics.

This is only the beginning. Here are other types of work we're doing on the hosiery problem:

1 CORRECT TWIST. A series of tests is now going on to determine the relation between twist and tensile strength, resilience, dullness and sheerness. When this work is completed, it will become a simple matter to select the best twist for any desired hosiery qualities.

2 STYLING FOR WEAR. The wearing qualities of rayon stockings can be improved by correct styling with regard to welt, heel, toe, and foot reinforcements. Extensive wear tests are now going on.

3 YARN RECOMMENDATIONS. Although the types and deniers of yarns now available are limited, experimental work is now in progress to determine which yarns are best suited for hosiery purposes.

4 UNIFORM KNITTING. Variations in machine speeds, tensions, and operating technique are under experiment to determine the best methods of producing a uniform, flawless-appearing fabric.

Of course we don't know all the answers. We never will. But you can be sure that this research program has already produced much information of value to you, and in this it will continue. So, if your problems have anything to do with rayon yarns, bring them in to rayon headquarters—to American Viscose Corporation. Our 4-PLY SERVICE gets results!

AMERICAN VISCOSE CORPORATION

PRODUCERS OF CROWN *RAYON YARNS AND STAPLE FIBERS*

Copyright 1942—American Viscose Corp.

CROWN TESTED AND APPROVED RAYON FABRIC

SALES OFFICES: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa. PLANTS: Marcus Hook, Pa.; Roanoke, Va.; Parkersburg, W. Va.; Lewistown, Pa.; Meadville, Pa.; Nitro, W. Va.; Front Royal, Va.

Invaluable...

TIME SAVERS

CUT TEXTILE MACHINERY MAINTENANCE

Knurled
SELF-LOCKING
HOLLOW SET SCREWS

UNBRAKO
REG. U.S. PAT. OFF.

THE KNURLED POINTS

Just tighten up as usual and they stay put—won't shake loose.

Hold relentlessly—regardless of vibration. Can be used again and again.

"Unbrako" cuts maintenance costs . . . aids in maintaining a smooth production flow.

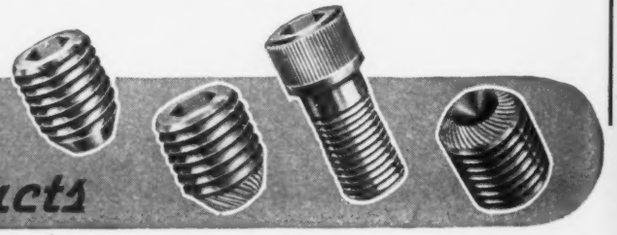
So many textile mills standardize on "Unbrako" because their experience test proves "Unbrako" best. Better than average deliveries. Send for details, and make your next order "Unbrako".

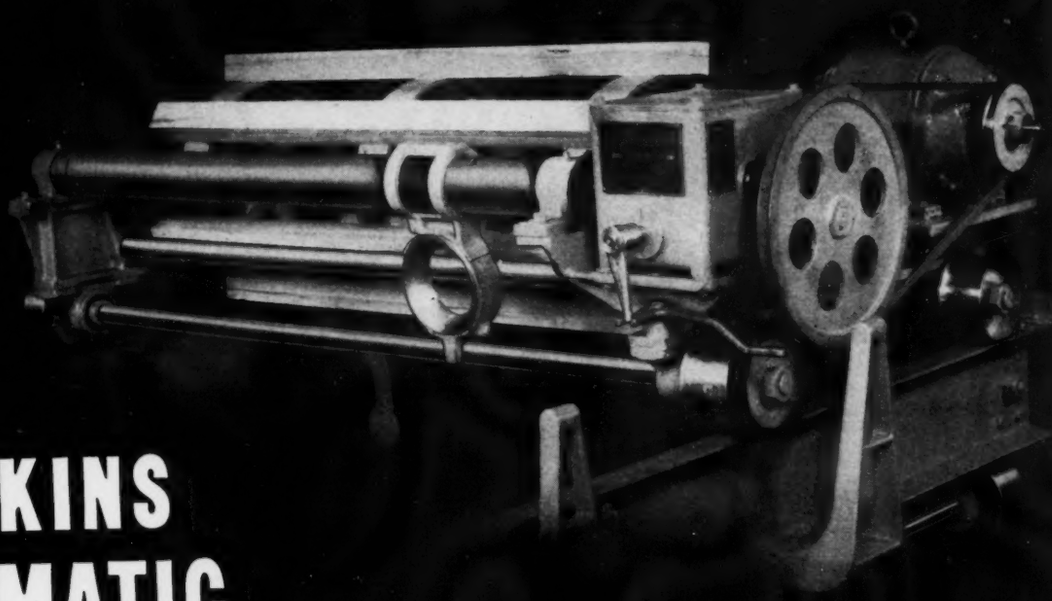
The uniform accuracy and strength of "Unbrako" Welt Bar Screws likewise render exceptional service in textile mill operations.

The Knurling of Socket Screws originated with "Unbrako" years ago.

STANDARD PRESSED STEEL CO
JENKINTOWN, PENNA. BOX 571
— BRANCHES —
BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

Reg. U. S. Pat. Office
UNBRAKO *Screw Products*





PERKINS AUTOMATIC BIN PILERS

PATENTED

You cannot afford to pile by hand

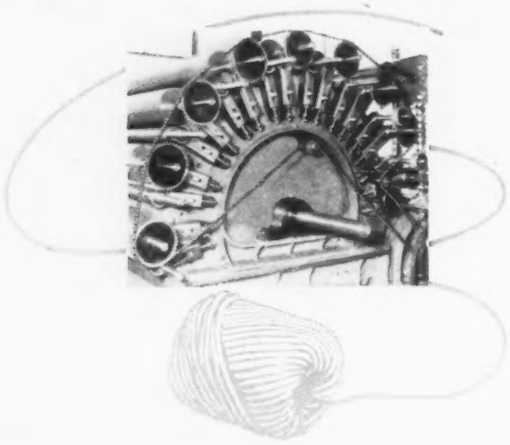
B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

If this garnett were working for you . . .

How would you drive it to gain these advantages . . .



A *Perfect* maintenance of speed ratios between all functions?

B *Continuous* 98.6% efficiency in the use of power?

C *Quiet,* smooth operation that all mill operators want?

Why use BALDWIN Roller Chain Belts?

● Do you know that only roller chain belts provide perfect maintenance of speed ratios between all functions of textile machines—yet have the ability to absorb shocks and to protect the working parts against overloads?

Do you know that only roller chain belts provide continuous 98.6% efficiency? That they are quiet, clean, smooth running?

You'll find the Baldwin man very helpful in redesigning old drives in your plant or developing new ones to bring the advantages of Baldwin roller chain belts to your mill and to your pocketbook. Baldwin-Duckworth, division of Chain Belt Company, 346 Plainfield Street, Springfield, Mass.

PLEASE NOTE

Although our men and our plants are on an "all out for victory" basis these days, your inquiry will receive prompt attention. Naturally, delivery of B-D products is dependent upon the Priority of your needs.

Positive!

THAT'S **BALDWIN**

ROLLER CHAIN BELTS

YOU KNOW WHAT BETTER LIGHTING CAN DO IN YOUR PLANT TODAY...*

**Science says, performance records prove, he can work better, faster, and more accurately with higher quality working daylight, properly distributed.*

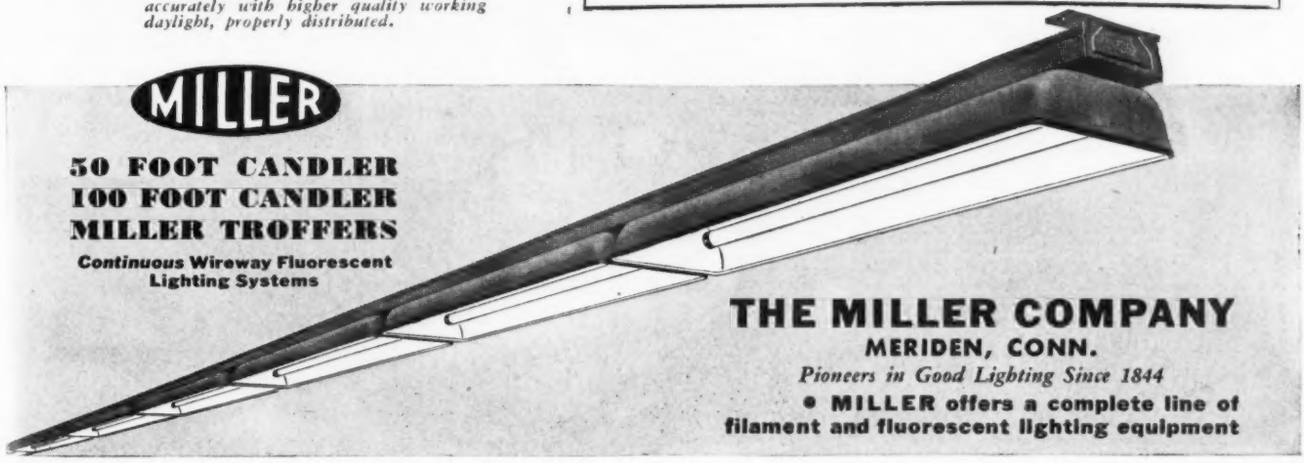
★ ★ ★ but do you know how *fast* and *economically* you can get it ★ ★ ★ with a MILLER Continuous Wireway Fluorescent Lighting System?

● There is no fluorescent lighting equipment *exactly* like the MILLER *Continuous System*. Built right into it is a continuous wire channel containing *all* operating auxiliaries and conduit. This means hours, *even days*, saved from expensive wiring or rewiring of your plant . . . priority copper and other critical material saved . . . dollars saved, too. It means your new and better lighting *system* goes in, *not* fixture by fixture, but *complete* row after row, all ready to go to work for you.

Worried about *war* production? Any qualified lighting authority will tell you that illumination of 50 foot candles or better in your plant from MILLER 50 FOOT CANDLER or 100 FOOT CANDLER (MILLER TROFFERS in your offices and drafting room) will deliver *more* work and *better* work from more satisfied, eye-fit employees. Write for details and you'll discover you never knew there was such a lighting system as this! (*Representatives in principal cities.*)

"Fingertip Facts" about the MILLER Fluorescent Lighting System

HIGHER ILLUMINATION . . . 50 to 100 foot candles or more—men work better, faster. ● **30 TO 50% LOWER INSTALLATION COSTS** . . . Make war production dollars go further. ● **FASTER INSTALLATION** . . . Steps up building schedule—plants get into production quicker. ● **SIMPLIFIED MAINTENANCE** . . . Easy-to clean, removable reflectors—save man-hours for production. ● **UNIFORM LIGHT DISTRIBUTION** — Production setup can be changed without need for touching lighting.



MILLER

50 FOOT CANDLER
100 FOOT CANDLER
MILLER TROFFERS

***Continuous* Wireway Fluorescent Lighting Systems**

THE MILLER COMPANY
MERIDEN, CONN.

Pioneers in Good Lighting Since 1844

● **MILLER offers a complete line of filament and fluorescent lighting equipment**

Ease the strain on your equipment
...with tough
SHELL TEXTILIS OILS
MILLS that use Shell Textilis Oils find they stand up under the most grueling operating conditions . . . help cut down on delays . . . keep product quality high. Why? Because there is a Shell Textilis Oil designed specifically for each type of textile-machine lubrication. Call in the Shell man now. Let him show you how to get the most from your lubricants.
SHELL

This advertisement also appeared in:
NEW YORK TIMES
CLEVELAND PLAIN DEALER
CHICAGO DAILY NEWS
DETROIT FREE PRESS
WASHINGTON POST

You Expected to Read This NEXT YEAR!

Industry after industry is beating its promise as America's war production sets new world's records . . . Management, labor, W. P. B., Army, Navy, the Maritime Commission and other government departments are cooperating to make next year's headlines come true THIS year.

In World War I, the Kaiser feared American manpower. In World War II, Hitler is even more fearful of our rapid transition from peace to war production. . . . He has reason to be afraid.

Printing press factories are exceeding quotas on anti-aircraft gun parts.

Spark plug manufacturers are setting new speed records in machine gun production.

The heavy-transportation industry is making giant chassis for big guns at a faster rate than all the Axis powers combined.

In this industry, men who used to make locomotives and tractors are changing "Too Little and too Late" to read "Too Much and too Soon," from the enemy's viewpoint.

Starting just a few months ago, with a bale of blueprints and a knowledge of how to build such things as road-scrapers, power-shovels and trucks, the heavy-transportation industry is turning out mobile artillery that will shake the earth in more than a literal sense.

• • •

The story of how this industry joined the army carries a significance which should be understood and remembered.

The significance is that America has solved the problem of exchanging production techniques between specialized industries. This process went on unnoticed in peacetime. War gave it prominence.

OVER

▶When the bales of blueprints were first delivered, and the heavy-transportation industry started on its job of producing prime-movers and chassis for big guns in quantity, new production techniques were needed in a hurry.

▶Here are some of the questions that arose:

"How do you weld such heavy sub-assemblies?"

"What welding fixtures will handle these parts so that our workmen can always weld down-hand?"

"How can we make these long, heavy welds and have sound metal from one end to the other?"

"What's the best technique for testing welded parts? Shall we x-ray, or use the magnaflux process?"

"What's the best way to support these welded assemblies for machining?"

That's just a few of the thousands of questions that arose in the minds of experienced men when they had to solve new problems.

They illustrate the fact that American production methods depend upon specialized techniques and machines.

Each man with such a problem knew that someone, somewhere, had solved his problem, or might solve it before he could work out his own answer.

Therefore he turned to the source of industrial information he had always used when he wanted to know what others were doing . . . his industrial magazine.

Ever since the Maginot Line was flanked, the Industrial Press of America has been helping rookie industries to become veterans in the battle of war production.

▶It doesn't do this by exhortation or command, but by answering thousands of specific questions.

Just as newspapers keep their war correspondents at the front, Industrial Magazines keep their "war-production-correspondents" in the plants where weapons and equipment are made. McGraw-Hill editors are mobilized for war as literally as though they were firing weapons instead of helping to produce them. More than 90% of the time of McGraw-Hill's 153 editors and 725 engineer-correspondents is devoted either to visiting war-production plants (to study production techniques) or in writing "war stories" on how production problems were solved.

"Know-how" is the secret of the amazing records now being made by American Industry. And "know-how" comes from thousands of "little facts" like this:

Information on tool shapes for cutting the harder steels of war is vital literature to the engineer, designer or production man with the particular problem of cutting those steels confronting him.

The industrial editor does not work alone in giving vital information to men on the production line. In much the same way, manufacturers are war-converting their industrial advertising to show their readers how to use their products more effectively. For instance:

A business-paper advertisement showing how to make old taps and dies last longer has no glamour for anyone but the man who must rush production with an inadequate supply of new ones. To him it has enough "oomph" to be clipped and placed on his office wall.

To the casual observer, the Industrial Press is about as exciting as the rows of wires that stretch along every road and railway. . . . The simile is very apt. Both exist solely for the interchange of ideas. Both are typically American in the extent to which they have been developed and applied to the whole economy. . . . *This advertisement published by the McGraw-Hill Network of Industrial Communication.*

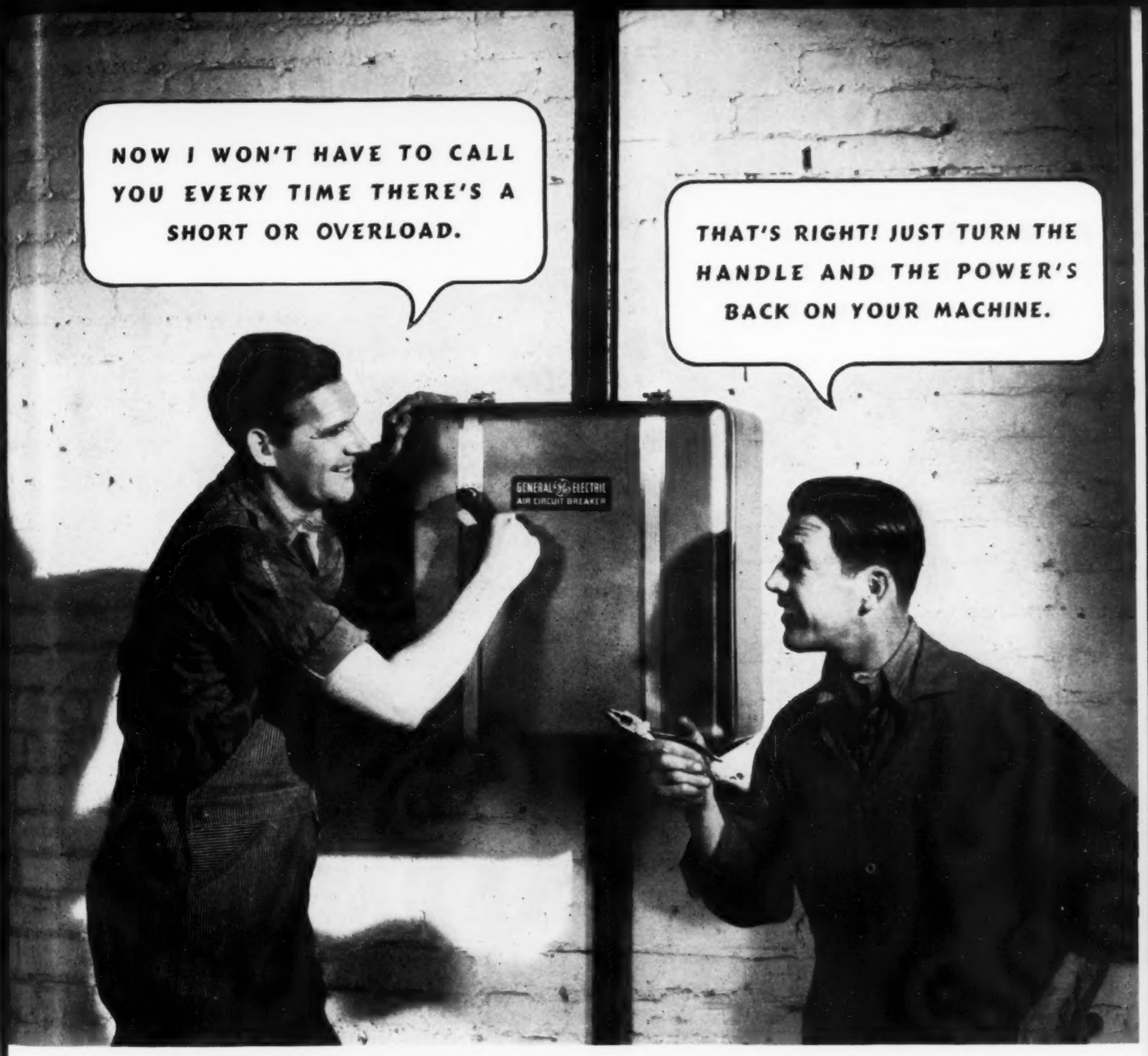
• • •

THE McGRAW-HILL NETWORK

23 PUBLICATIONS WHICH HELP MORE THAN 1,000,000 EXECUTIVES, DESIGNERS AND PRODUCTION MEN TO EXCHANGE IDEAS ON WAR-PRODUCTION PROBLEMS

American Machinist • Aviation • Bus Transportation • Business Week • Chemical & Metallurgical Engineering • Coal Age • Construction Methods • Electrical Contracting • Electrical Merchandising • Electrical West • Electrical World • Electronics Engineering & Mining Journal • E. & M. J. Metal and Mineral Markets • Engineering News Record • Factory Management & Maintenance • Food Industries • Mill Supplies • Power • Product Engineering • Textile World • Transit Journal • Wholesaler's Salesman. Also publishers of thousands of books for technical and engineering schools and colleges, as well as for general business use.

McGRAW-HILL PUBLISHING COMPANY, INC.
330 WEST 42nd STREET, NEW YORK

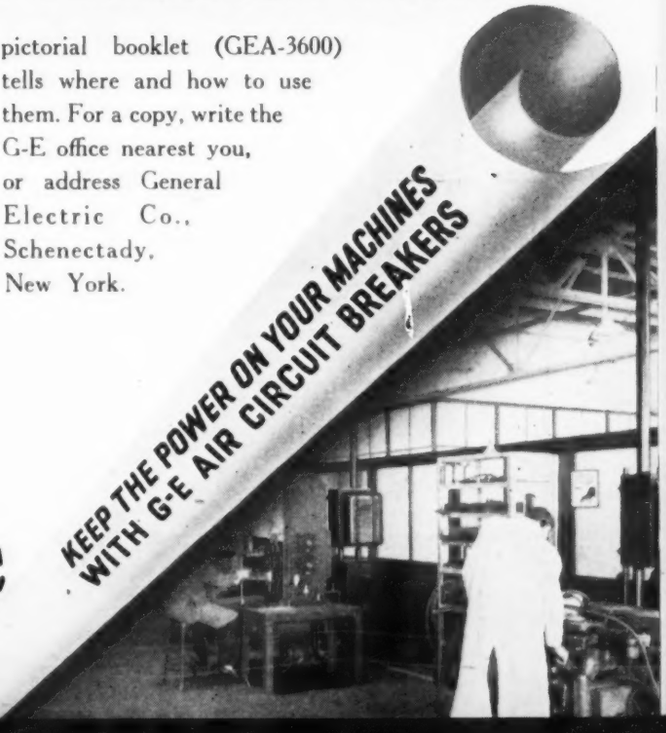

NOW I WON'T HAVE TO CALL YOU EVERY TIME THERE'S A SHORT OR OVERLOAD.
THAT'S RIGHT! JUST TURN THE HANDLE AND THE POWER'S BACK ON YOUR MACHINE.
GENERAL ELECTRIC
AIR CIRCUIT BREAKER

Here's Why YOU'LL Like This New G-E Removable Breaker

WITH this *3-minute* breaker you can re-establish service after temporary faults in less than *one* minute. You can remove and inspect the breaker unit—in safety, away from live parts—in less than *two* minutes. And where load conditions have changed, you can interchange breaker units in less than *three* minutes.

This air circuit breaker is built to meet today's demands for quick installation and provide dependable protection for defense production lines. Its new features include a simple, ingenious method of mounting and a convenient modernized enclosing case, which combine to give you a removable dustproof breaker that is easy to install, easy to operate, and easy to inspect.

Give your production, equipment, and personnel complete protection. Install these breakers in lighting, power, and motor circuits—up to 600 volts. They will protect both the circuit wiring and the apparatus connected to the circuit. A new pictorial booklet (GEA-3600) tells where and how to use them. For a copy, write the G-E office nearest you, or address General Electric Co., Schenectady, New York.



GENERAL ELECTRIC

860-21-7500

THE BREAKER WITH THE DISCONNECT FEATURE

Every Hour *Saved* in Industry

Brings Victory One Hour Closer!

BACK in the days before Pearl Harbor a 60-minute hour was all right. Now everything is changed. More production minutes crowded into an hour means more hours saved in a day—and every hour saved brings victory that much closer.

For example: One nationally known mill was using one hour a week to lubricate each of 18 carders—or a total of 18 hours. Alemite showed this mill how to meter the exact amount needed to each bearing and complete the job in *20 minutes per machine*—a saving of twelve vital production hours each week!

Give yourself this quick quiz: 1. Are *your* machines halted for lubrication? 2. Are breakdowns stealing vital production time? 3. Are power costs too high? 4. Is contamination a problem? 5. Are you having lubrication difficulties caused by heat, cold, or chemicals?

The chances are that an Alemite lubrication expert can help you increase your output—simply by pointing out where peace-time lubrication methods are *stealing vital hours* from war production. For quick action, wire or phone direct! No obligation!

ALEMITE
REG. U. S. PAT. OFF
1888 Diversey Parkway, Chicago, Ill. • Belleville, Ontario

Another Product of STEWART WARNER

Industrial LUBRICATION

ALEMITE HELPS THE WORLD GO 'ROUND

Ask Anyone in Industry!

ALEMITE MODEL 6190
25-LB. ELECTRIC POWER GUN

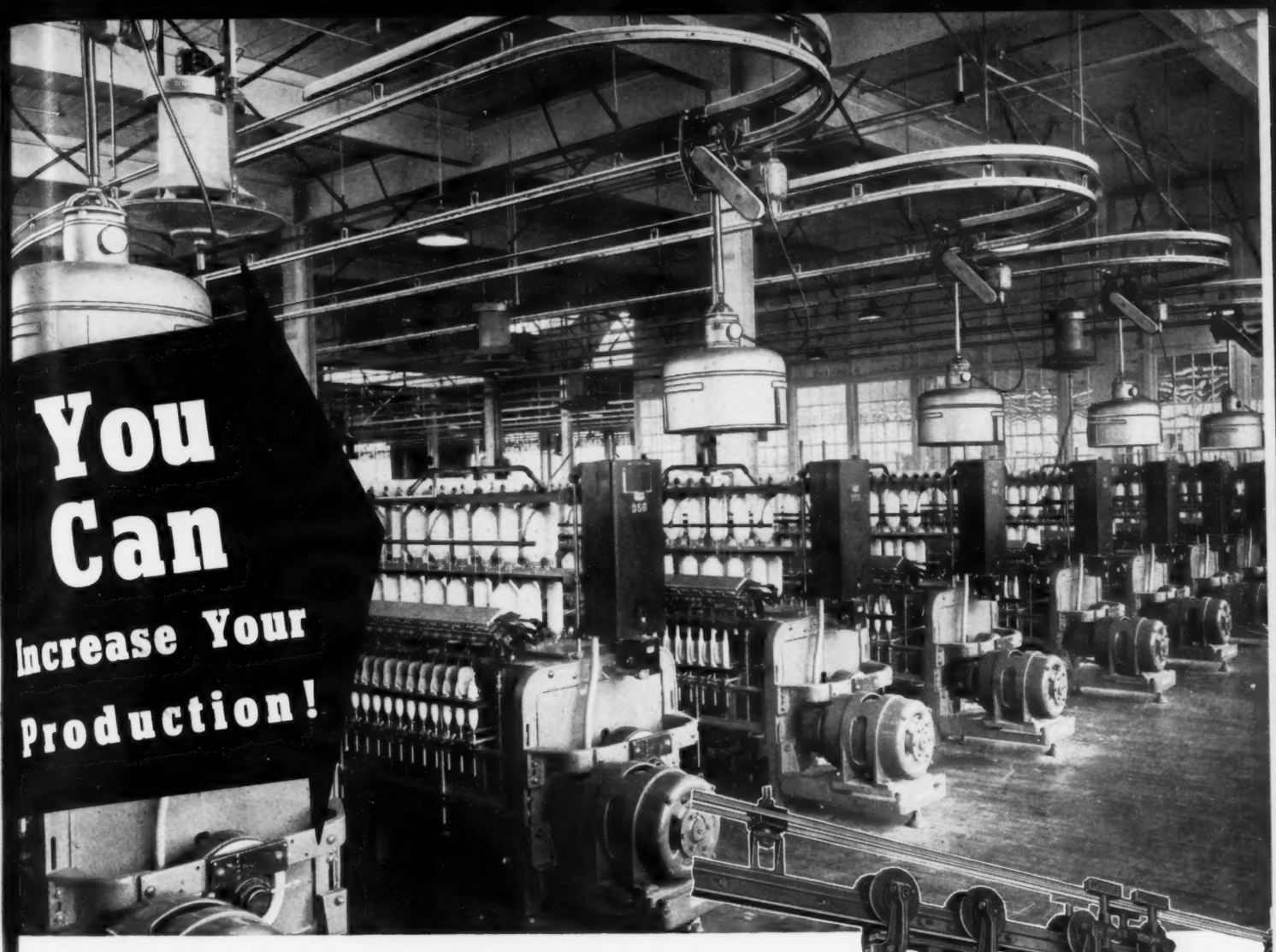
Delivers 12 ounces of semi-solid lubricant per minute under high pressure. Nitralloy high pressure piston and cylinder. Heavy duty universal motor; easily portable; complete with hose and valve.

ALEMITE 6700 SERIES
BARREL PUMPS

. . . comprise a complete range of heavy-duty pneumatic pumps, available for high, medium, or low pressures. Handle heavy greases direct from original drums, with ample capacity to serve several outlets.

ALEMITE MODEL 6528
40-LB. AIR-OPERATED GUN

Operates on 100 to 150 lbs. air; handles heavy fibrous grease at 33 times air pressure used; exclusive helix arm and worm assures positive prime—no air pockets.



You Can Increase Your Production!

THE American MonoRail Automatic Cleaners keep machines producing full time. *Now*, more than ever before, it is necessary to keep machines going at top speeds. There is no lost production when American MonoRail Overhead Cleaners are at work over spinning, winding, twisting and warping machinery. Automatic cleaning enables spinners to handle more sides and reduce the number of gouts or bunches in the yarn. Cleaning is done better, quicker and more economically with American MonoRail Automatic Overhead Cleaners.

Let an American MonoRail Engineer explain such advantages as better running work; fewer gouts or bunches; less ends down; lower cleaning costs; no lost production and reduced machine stoppage. This information will be gladly given without cost or obligation on your part. Write us today.

Send for copy of book describing Automatic Cleaning and Overhead Handling in the Textile Industry.

THE AMERICAN MONORAIL CO.

13108 Athens Avenue ★ Cleveland, Ohio

Serving IN WAR!
Saving IN PEACE!

This Borg-Warner Product that Conserves Vital Alloys

World War II finds IngAclad ready to conserve vital alloys in many installations where stainless service is required.

Here is a Stainless-Clad Steel that during 10 years of Peace has stood the severest tests in continuous use. So with the conservation of vital alloys so urgent in war time production, here is truly "A 10 Year Start toward Victory."

For the present, production is necessarily devoted to the essential needs of war time chemistry, war time food processing and other needs which must come first.

The service IngAclad Stainless-Clad Steel is performing today will not be forgotten. In countless installations the economies it makes possible will give it an even greater peace time acceptance.

We also produce solid corrosion and heat-resisting alloys.

INGERSOLL STEEL & DISC DIVISION
BORG-WARNER CORPORATION
310 South Michigan Avenue • Chicago, Illinois
Plants: Chicago, Ill.; New Castle, Ind.; Kalamazoo, Mich.

IngAclad is rolled in Sheets 8 to 18 Gauge, and in Plates 3 16" to 1¼". Regularly supplied clad with 18-8 Stainless, but also available in other analyses.

Unretouched photo of IngAclad shaving shows no separation of the two metals at any point.

Users of IngAclad include:

American Cyanamid Co.
R. D. Cole Mfg. Co., Newnan, Ga.
Dow Chemical Co.
E. I. DuPont de Nemours Co.
Greenville Steel & Foundry Co., Greenville, So. Car.
Graver Tank & Mfg. Co. Inc., E. Chicago, Ind.
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Holliston Mills, Kingsport, Tenn.
Jeffrey Mfg. Co., Columbus, O.
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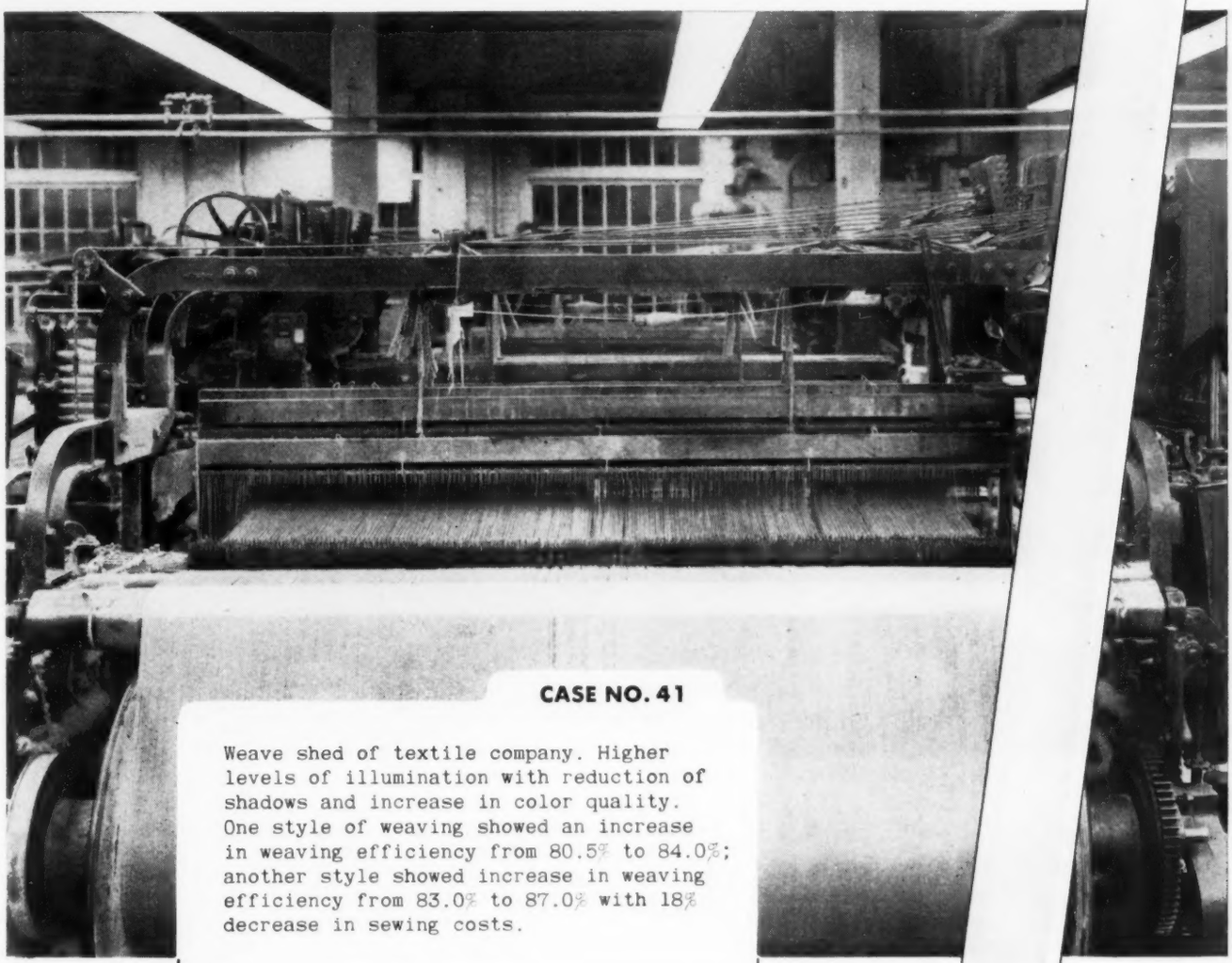
"A Borg-Warner Product"

INGACLAD
STAINLESS-CLAD STEEL

EFFICIENCY UP... SEWING COSTS DOWN

with G-E Fluorescent Lighting!



CASE NO. 41

Weave shed of textile company. Higher levels of illumination with reduction of shadows and increase in color quality. One style of weaving showed an increase in weaving efficiency from 80.5% to 84.0%; another style showed increase in weaving efficiency from 83.0% to 87.0% with 18% decrease in sewing costs.

THE actual case described above is only one among scores of similar cases studied by General Electric to show specifically what advantages better lighting . . . in this case, G-E Fluorescent Lighting . . . offers war industries.

If your mills are faced with the problem of getting more and better war production without adding any extra floor space, machinery, or workmen, cool indoor daylight with G-E MAZDA F (fluorescent) lamps in certified fluorescent lighting fixtures may be the answer.

Or, if you must make your present lighting equipment do, here are some things that will improve its effectiveness:

1 Soap and water . . . on a *regular* cleaning schedule.

2 Right size bulbs in present fixtures.

3 Reallocation of present lighting to fit new demands.

4 Supplementary lighting for most critical seeing operations, such as inspections.

5 Light-colored walls to reduce light absorption; light-colored finishes on machinery to increase visibility.

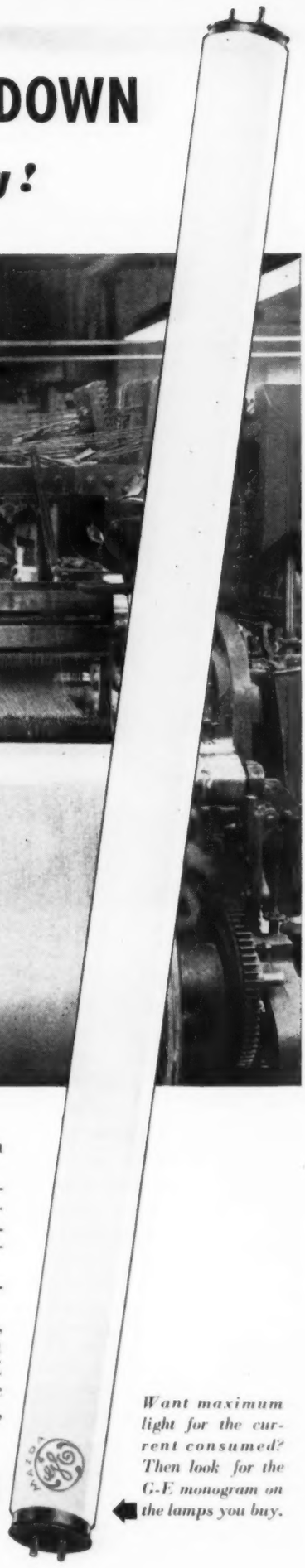
6 Frequent light meter checks on maintenance.

Only if these other methods are inadequate, should new incandescent or fluorescent installations be made. See your G-E lamp supplier or write General Electric Company, Dept. 166-T-5, Nela Park, Cleveland, Ohio.

G-E MAZDA LAMPS

GENERAL ELECTRIC

Made to stay brighter longer



Want maximum light for the current consumed? Then look for the G-E monogram on the lamps you buy.

Beauty bath for rayon

MODINAL* D

NEW DOUBLE-STRENGTH DETERGENT

"MODINAL" D imparts richness of handle and a full, luxurious finish to rayon piece goods. Fabrics are left free of scum, throwing oils and weaving compounds. More level dyeings and better bleaching are obtained in ensuing operations.

Time, steam, labor and water are saved, because the "Modinal" scour reduces rinsing time. This double-strength detergent also minimizes discolorations that often occur when scoured goods dry before dyeing.

Have one of our technical men call at your plant to discuss where and how "Modinal" D improves finishing results and operations.

"MODINAL" *is the trade-mark used by the Gardinol Corporation to designate a group of its fatty alcohol sulphates.*

GARDINOL CORPORATION • General Offices, Wilmington, Delaware

SALES AGENTS

Procter & Gamble, Cincinnati, Ohio

E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware

HOW WE BECAME INTERESTED IN SMOKING

We enjoy a good smoke as much as the next fellow. But our interest in smoking has taken a new turn in recent years.

Some time ago, our engineers began studies to find a way to remove tobacco smoke from the air. They knew if they could do that they had a commercially practical solution to the problems caused by all kinds of atmospheric dust and dirt. They experimented with tobacco smoke because its particles are the tiniest of all air-borne matter. After many years of research, they developed the first air cleaner that operated by electricity, and it removed all traces of tobacco smoke.

This extraordinary Westinghouse air cleaner we called the PRECIPITRON*, and for three years now it has cleaned circulating air electrically in stores, offices, radio stations, hospitals, cafes, telephone exchanges.

In the beginning, our engineers didn't dream their pioneering would create dirt-free industries for an America at war. Yet, today that's the all-out, single-purpose job assigned to Precipitron. It has become a war production tool in its own right because of its efficiency and its economy of operation.

Hidden away within ventilating ducts of windowless blackout plants, Precipitron is eliminating industrial haze formed by machine tool coolants. It is reducing maintenance shutdowns for large rotating machinery in steel mills and central stations. Where precision engine parts are machined, Precipitron protects the superfinished surfaces from abrasive air-borne grit and dust. Away from the roar of industry, Precipitron removes atmospheric contamination in serum and blood plasma laboratories.

These are but a few of the jobs electric air cleaning is doing in war industries. We will be glad to tell you more about them and more about the operation of Precipitron itself. Just write Westinghouse Electric & Manufacturing Company, Edgewater Park, Cleveland, Ohio, for our new folder B-3083.

*Trade-mark registered in U. S. A.

Westinghouse *Precipitron*

★ In one of their recent bulletins on hoists, the National Safety Council says:

> *"Hooks which have become bent on account of overloading should not be straightened and put back in service, but a new hook should be provided. When a hook is once bent the stress in the metal tends to weaken it so that afterward its strength is a matter of doubt and cannot be depended upon."*

That's good advice. With the lives of American boys utterly dependent upon our industrial production, this is no time to take chances which may cause lost time accidents to men or machines, or both.

Watch the Hooks. Wright load hooks are drop-forged from special steel which, when subjected to excessive overloading, give visible warning by opening slowly. When the bottom hook has started to open, look to the top hook, too, for while it is stronger than the bottom hook, it also may be reaching a danger point.

Don't Abuse Your Hoist. Now that we are all faced with restrictions and shortages proper maintenance is of paramount importance. While every **WRIGHT HOIST** is built with load-carrying factors considerably in excess of their rated capacities, like many other well-made pieces of mechanical equipment built for specific duty, they should not be overloaded. Overloading is dangerous—to men, materials, machinery and steady production. Remember—abuse to machinery today is akin to sabotage. Conserve steel and maintain production schedules by careful use, regular inspection and proper lubrication.

WRIGHT MANUFACTURING DIVISION
YORK, PA. CHICAGO SAN FRANCISCO NEW YORK

In Business for Your Safety

ACCO

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

THE SEAL OF QUALITY AND SERVICE SINCE 1857

US

LOOK OVER *the* SITUATION NOW!

There *is* a difference in bobbins produced by various manufacturers — a difference in quality of wood, skill of workmen, and method of finishing. These differences can be vitally important to users of bobbins.

We originated the automatic loom bobbin years ago and are still producing bobbins which are the truest running at high speeds . . . and which also have the longest life.

May we show you samples?

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PROVIDENCE, R. I. GREENVILLE, S. C.
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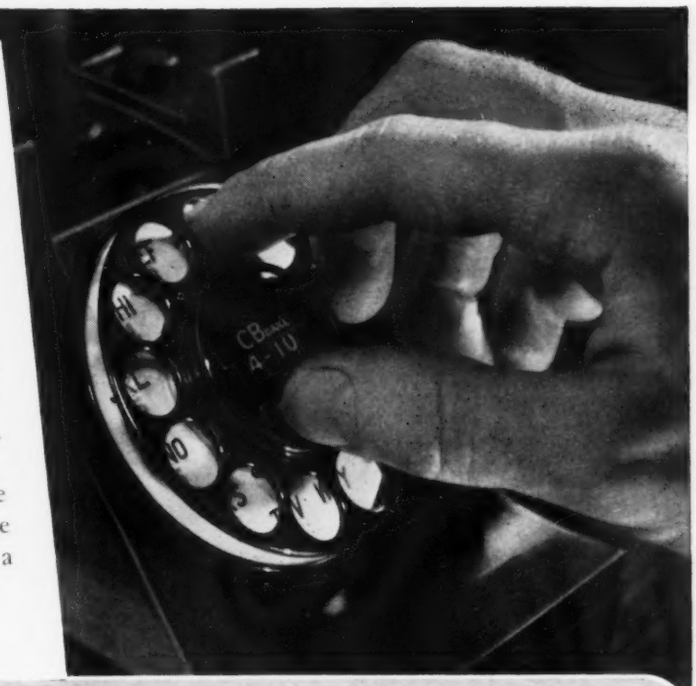
CHICAGO AGENT: Albert R. Breen, 20 E. Jackson Blvd.
CANADIAN AGENT: W. J. Westaway, Montreal
ALABAMA AGENT: Young & Vann Supply Co., Birmingham

Have you tried Scully?

WE are not magicians, but we will do everything within our power to help you get the materials you need. We have stocks of many steels on hand, also tools, machinery and other equipment.

Be sure to try Scully — see our phone numbers below. Cut out the number of the warehouse nearest you and paste it in a handy spot.



Structural material
Plates, various qualities
Floor Plates
Sheets: Hot Rolled, Cold Rolled, Galvanized, etc.
Bars (all shapes): Hot Rolled Carbon and Alloy grades
Hot Rolled Strip Steel
Spring Steel · Tool Steel
Drill Rod
Cold Finished Bars, Carbon and Alloy grades
Wire
COR-TEN and MAN-TEN Shapes, Sheets and Plates
Abrasion-Resisting Sheets and Plates
Eaves Trough, Conductor Pipe
U·S·S Stainless Steel and Stainless products
Expanded Metal
Rails
Boiler Tubes
Rivets, Bolts, Nuts, Washers
Dardelet Rivet and Machine Bolts
Nails
Welders and Welding Accessories
Chain
Clamps
Flanges
Expanders, etc.
Hoists, Shears, Rolls, Punches, Cut-Off Machines, Saws, Nibblers, etc.

CHICAGO ..... **BRUnswick 2000**
Teletype CG. 605
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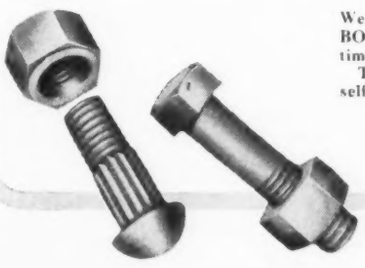
NEWARK, N. J. ..... **BIgelow 3-5920**
BErgen 3-1614 - REctor 2-6560

IN STOCK! DARDELET "RIVET-BOLTS"



We can offer immediate shipment of both Dardelet "RIVET-BOLTS" and Dardelet Machine Bolts. These bolts save valuable time and labor and assure permanently tight joints.

The Dardelet "RIVET-BOLT" is a ribbed bolt with Dardelet self-locking thread, and is widely used for field erection of structural steel. Has recessed nut. Bolt is driven in and nut is applied with wrench. Economical and strong.

The Machine Bolt with Dardelet self-locking thread is for general use where vibration is present.

USS Scully Service

SCULLY STEEL PRODUCTS COMPANY

Distributors of Steel and Steel Products

Warehouses at CHICAGO · NEWARK, N. J. · ST. LOUIS · BOSTON
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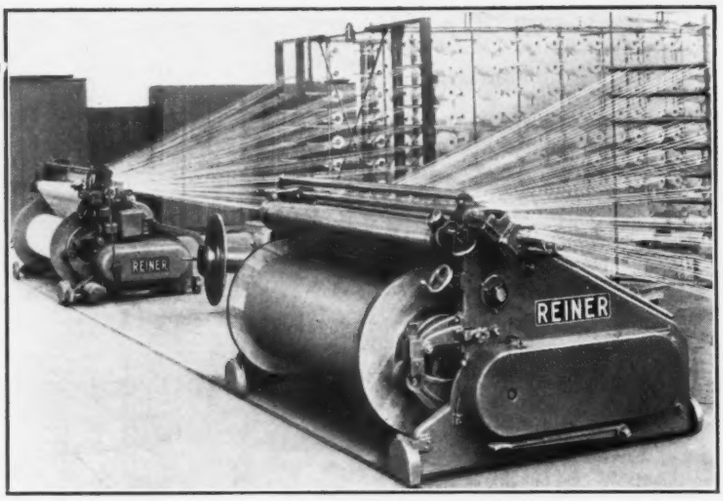
UNITED STATES STEEL

APPROVED BY EXPERTS

THE NEW REINER HIGH-SPEED WARPER AND CREEL

for beaming Rayon, Spun Rayon, Wool, Worsted and Cotton



DUE to direct beam drive, an entirely new principle, the Reiner High-Speed Warper is the most advanced in the market.

Warping speed control automatically adjusted without clutch or mechanical drives. Stepless speed range from 100 to 1000 yards per minute. Slow sensitive starting speed, irrespective of operating speed desired.

These and many other new features guarantee the most efficient and economical equipment for the highest quality product. In converting to cotton duck Reiner machines lower costs and speed up production.

Write for full information regarding this and all other REINER Thread Tensions, single and magazine high speed Creels and allied equipment. Kindly request — without obligation — agent's visit and further technical details.

ROBERT REINER, INC., WEEHAWKEN [*10 Minutes from Penn. Station! Via Lincoln Tunnel*] **NEW JERSEY**

Seems like *everybody* "came from Missouri"

—especially textile manufacturers, when the talk turns to starches or gums . . . But Corn Products Sales Company *welcome* this "show me" attitude. For the uniformity, cleanliness and consistent high quality of Corn Products Sales Company starches and gums put them way "out in front".

Many successful textile manufacturers use the services of Corn Products technicians, who are always glad to help with WARP SIZING, FINISHING or other textile problems.

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Textile Offices: Greenville, S. C. • Greensboro, N. C. • Atlanta, Ga. Spartanburg, S. C. • Birmingham, Ala. • Boston, Mass.

Air Borne

DESTRUCTION *can come in Industry*, too!

"DUST STORMS" in Industry, like the tragic Dust Bowl disaster of 1938, can cause incalculable losses—destroying materials, finished products and man hours of work. But dust, the air-borne saboteur, is one *industrial menace* we can *effectively fight* within our war production plants.

Today, American Industry, geared to produce as never before, is fully awake to the necessity for *adequate dust control*. Many hundreds of existing and converted plants—and practically all new defense plants — have installed American Air Filter equipment for the elimination of dust. In the Textile industry American Air Filters are preventing smudging and streaking and discoloration of products caused by dust, soot and smoke. Write for complete information on the Electro-Matic electric dust precipitator which collects air-borne particles of smoke, soot and dust electrically. Your air conditioning consultants will be glad to investigate and report to you on the performance records of American Air Filter equipment now in use in your industry. Free bulletins will also be sent on request. Write us.

AMERICAN AIR FILTERS

AMERICAN AIR FILTER COMPANY, INC., 304 CENTRAL AVE, LOUISVILLE, KY.
INCORPORATED

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Textile Conversion Order Seen Meeting E... Wartime Needs

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BUILT IN 39½", 54", 76" AND SPECIAL WIDTHS.

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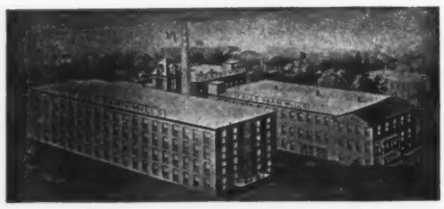
FALLS YARN MILLS

WOONSOCKET, R. I.

Incorporated 1904



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Rayon and Nylon Yarns

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Package Yarn **DRYER**

- This Proctor Dryer is used for drying yarn that has been dyed in package form.
- Properly conditioned air is impinged on the packages in an intense and concentrated stream in such a manner that the vapor pressure inside each package is raised to a point where the moisture is forced to the outside surface.
- An ingenious feature automatically reverses the direction of air flow at timed intervals so that the air impinges on the packages, first from one direction, then the opposite.
- The new Proctor Package Yarn Dryer gives operating ease because of its mechanical simplicity . . . drying is speedy and exceedingly economical . . . maximum output is possible in a minimum of floor space.

PROCTOR & SCHWARTZ · INC · PHILADELPHIA

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Dripping, leaking oils require frequent application. They get onto warps and woven goods and cause oil spot damage which reduces Weave Room production.

Drip-less, waste-less NON-FLUID OIL stays in bearings and off goods. It outlasts oil many times over, so cuts cost of lubrication—increasing production.

Used successfully by 7 out of 10 mills. Write for—

Write for free testing sample and instructive bulletin

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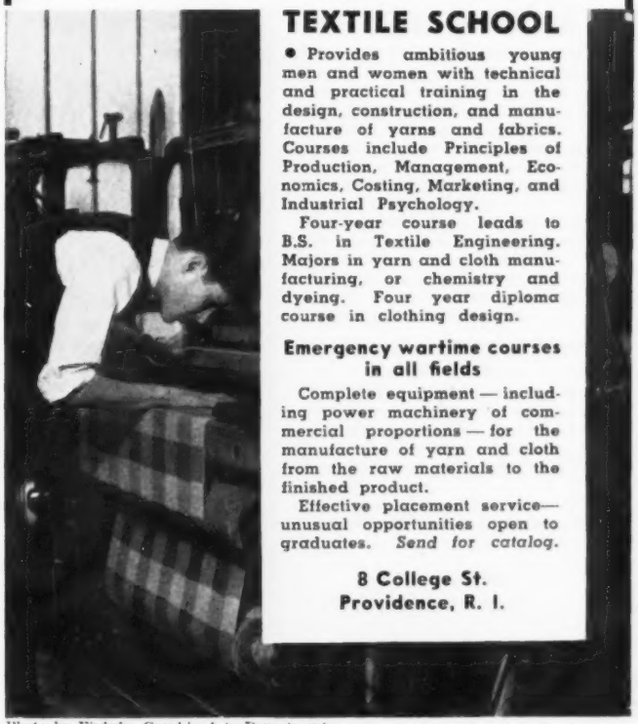
RHODE ISLAND SCHOOL OF DESIGN



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• Provides ambitious young men and women with technical and practical training in the design, construction, and manufacture of yarns and fabrics. Courses include Principles of Production, Management, Economics, Costing, Marketing, and Industrial Psychology.

Four-year course leads to B.S. in Textile Engineering. Majors in yarn and cloth manufacturing, or chemistry and dyeing. Four year diploma course in clothing design.

Emergency wartime courses in all fields

Complete equipment — including power machinery of commercial proportions — for the manufacture of yarn and cloth from the raw materials to the finished product.

Effective placement service—unusual opportunities open to graduates. *Send for catalog.*

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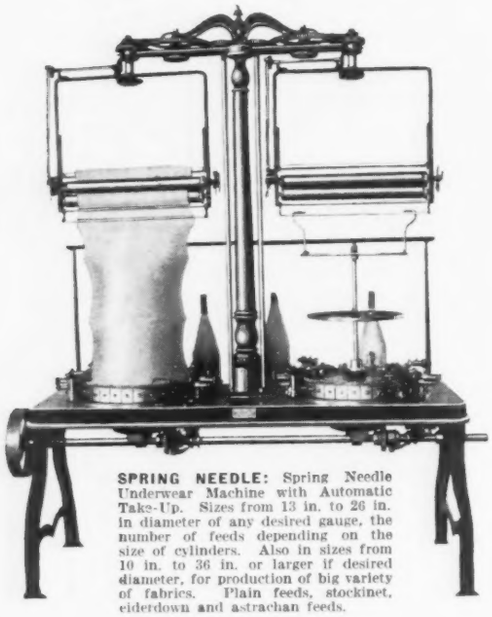
KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



SPRING NEEDLE: Spring Needle Underwear Machine with Automatic Take-Up. Sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also in sizes from 10 in. to 36 in. or larger if desired diameter, for production of big variety of fabrics. Plain feeds, stockinet, eiderdown and astrachan feeds.

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are Patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just **WRITE**

CRANE Improved Automatic
3 Colored

Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅝ in. to 20⅝ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

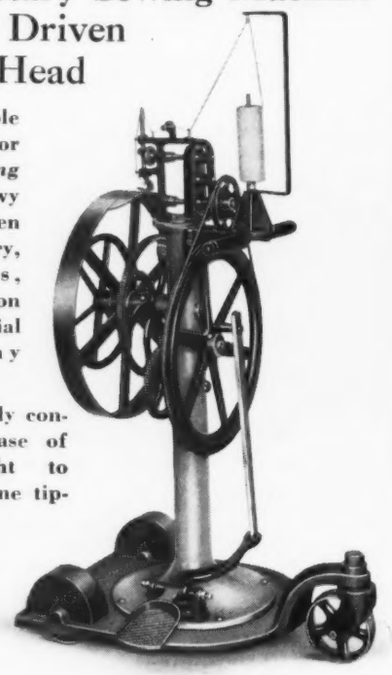
1870 **CRANE** 1942

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle

KNITTING MACHINERY

Improved Heavy Duty Foot Power Rotary Sewing Machine With Gear Driven Sewing Head



The best possible machine built for *heavy duty sewing* on light and heavy cotton and woolen goods, wet or dry, cotton ducks, woolen and cotton blankets, artificial leather or any heavy fabrics.

Machine is heavily constructed with base of sufficient weight to avoid the machine tipping, also machine cut gears throughout and rubber tired floor wheels.

DINSMORE MFG. CO.

See Also Textile World Year Book and Catalog

No. 5

SALEM, MASS.

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machine and hand knitting

Yarns

French-Bradford

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

Complete color assortments

American Woolen Company

225 Fourth Avenue New York

AMERICAN YARNS

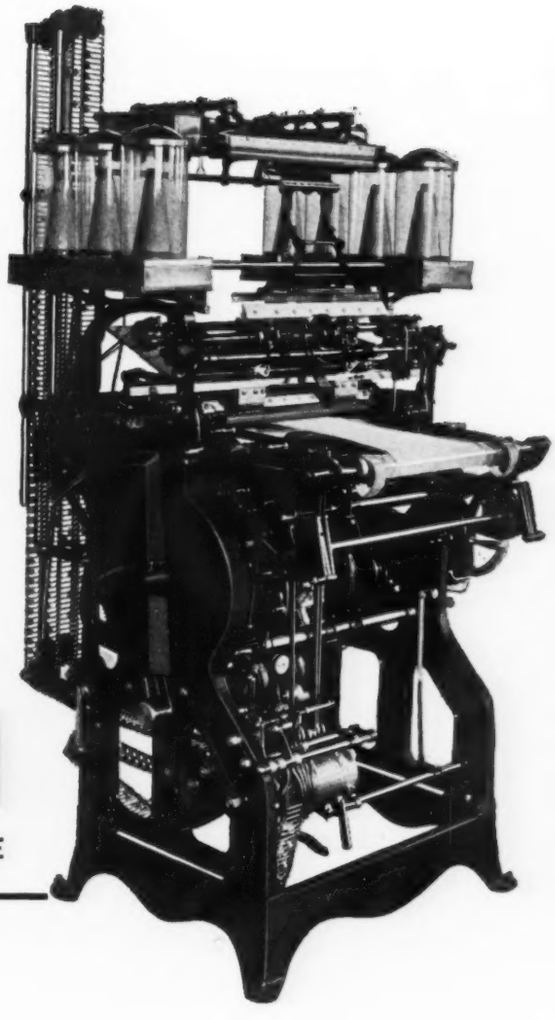
—have a Special Point for Hosiery Manufacturers Today

STOCKINGS

have gone "all out" for American yarns—nylons, rayons and cottons in fine gauges and combinations have captured the feminine heart.

These yarns might present production and matching difficulties to manufacturers who still operate with leggers and footers. But wherever there are Wildman Single-Head, Single-Unit, Full-Fashioned Hosiery Machines—the new trend is taken in stride. These machines handle any gauge or any combination, knitting the entire stocking in one continuous operation, perfect from top to toe. Wire, telephone or write for complete details.

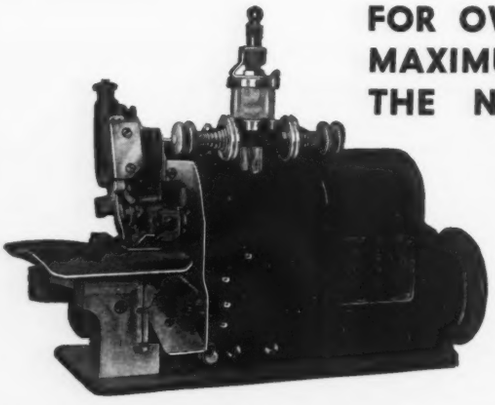
WILDMAN MFG. CO., NORRISTOWN, PA.



WILDMAN

SINGLE-HEAD, SINGLE-UNIT, FULL-FASHIONED HOSIERY MACHINE

Established 1838 **MERROW** **Incorporated 1894**



FOR OVERSEAMING AND OVEREDGING WITH MAXIMUM EFFICIENCY — MODERNIZE WITH THE NEW MERROW CLASS A MACHINES

The result of several generations of specialized effort in the industrial sewing machine field—combining quality production with high speed and low operating cost to a greater degree than ever before.

WRITE FOR DETAILS AND LET US DEMONSTRATE THESE MACHINES ON YOUR OWN FABRICS.

ALSO PLAIN CROCHET AND SHELL STITCH MODELS FOR ORNAMENTAL EDGE FINISHING AND CLASS 60 MACHINES FOR BUTT SEAMING

200 VARIETIES FOR 200 PURPOSES

THE MERROW MACHINE COMPANY

Starting Its Second Century

2803 LAUREL STREET HARTFORD, CONN., U. S. A.

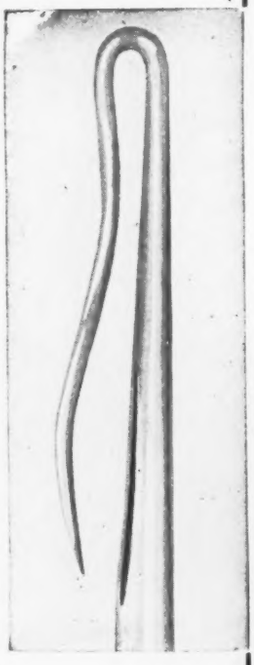
CHARLES COOPER CO., INC.

Bennington, Vermont

Manufacturers of

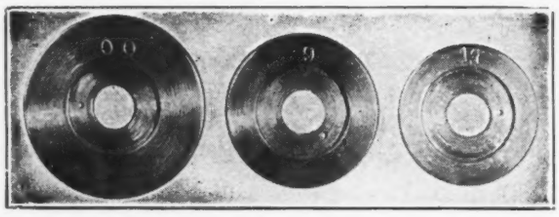
Quality LATCH and SPRING-BEARD

NEEDLES



also

Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**



Wayne Traverse Wheels for use on your Universal No. 90 winders, made of **oil hardened tool steel** or of bone hard fibre, cannot be beat for service and quality in their respective fields.

Our hardened steel wheels will last indefinitely, and because of their hardness will not cut or become nicked and therefore damage your silk. These wheels are accurately made. The size is correct and the finish of the face of the wheel is as smooth as polishing can make it.

If you want a softer and less expensive wheel we offer you our hard fibre wheels. These wheels are made of bone hard fibre, and are manufactured with the same accuracy and care as our steel wheels. These fibre wheels will give you the maximum of results that you can expect of a soft wheel. If, for any reason, you feel that you would like to try out fibre wheels, let us know and we will send you a sample of the size you want.

WAYNE MFG. CO. **Honesdale, Pa.**

THE LOYAL T. **IVES** COMPANY EST. 1874

SPRING BEARD KNITTING NEEDLES

For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines: Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

Sheet Metal Specialties to Order

NEW BRUNSWICK NEW JERSEY

Acme Products

for seamless hosiery knitting

Speak for themselves

Up-To-Date Machines

Needles

Economy Makers

ACME KNITTING MACHINE & NEEDLE CO.

FRANKLIN, N. H.

TOMPKINS

CIRCULAR SPRING NEEDLE

KNITTING MACHINES

FOR PRODUCING

UNDERWEAR	OVERCOATS
SWEATERS	TERRY CLOTH
SWEAT SHIRTS	STRIPED CLOTH
DRESS CLOTH	PATTERNS

RUBBER LAY-IN FABRICS

CIRCULAR LATCH NEEDLE

KNITTING MACHINES

FOR PRODUCING

TOQUES	SCARFS
PARKAS	SHAKER CAPS

TOMPKINS BROS. CO.

SINCE 1846 **SYRACUSE, N. Y.**

Dura Beau

REG. U. S. A. AND CANADA

CARRIES ON

For years past, countless leading brands of silk hosiery were *DuraBeau Finished* for added Beauty, Sheerness, Wearability, Spot, Snag and Run-Resistance. In fact, the word *DuraBeau* became almost synonymous with Quality Silk Hosiery. . . . Now, in war-time, silk hosiery is a thing of the past, but *DuraBeau* still carries on, imparting to today's Fibres all of the above qualities, to an even greater degree. . . . Anticipation, Research and Development have enabled us to say today:

"THERE'S A DURABEAU FINISH FOR EVERY AVAILABLE FIBRE"

SCHOLLER BROS., INC.

MANUFACTURERS OF TEXTILE SOAPS, SOFTENERS, OILS, FINISHES · COLLINS & WESTMORELAND STS., PHILADELPHIA, PA. · ST. CATHARINES, ONTARIO, CAN.

"MEON"

The WONDER *Product*

MEON "T" for conditioning cotton yarns is more than a penetrant or wetting agent. MEON "T" is hygroscopic, and by virtue of its property of breaking down surface tension, insures rapid absorption. MEON "T" permanently sets the twist and removes the kinks. Any amount of water can be imparted and retained by the use of MEON "T". Therein lies a *tangible* value for the manufacturer. . . .

Can be Used in

ANY CONDITIONING MACHINE

1 gallon MEON "T" to 99 gallons water

- INSURES SMOOTH WEAVING
- INCREASES BREAKING STRENGTH
- A RUST INHIBITOR
- WILL NOT AFFECT THE BOBBINS
- ECONOMICAL
- EFFICIENT

Use it on your Tyeing-in Machine

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for FIBRE CONDITIONING

ESTABLISHED 1874

ELIZABETH, N. J. — CHARLOTTE, N. C.

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SAVE BLEACH

How to get whiter whites when bleach is scarce is every mill's problem. You can count on PQ Silicates to help to conserve your bleach. PQ Silicate in the bath properly controls its release, avoiding waste.

Leading mills save money by using the right silicate in scouring, in boil-off and other detergent textile processes. You'll want complete information on how you can maintain quality whiteness with less bleach. Call on us.

PQ Silicates for Textile Processes:

Star Brand, brilliantly clear 42° Baumé silicate

Metso Granular, white, free-flowing granulated metasilicate of soda

PHILADELPHIA QUARTZ COMPANY

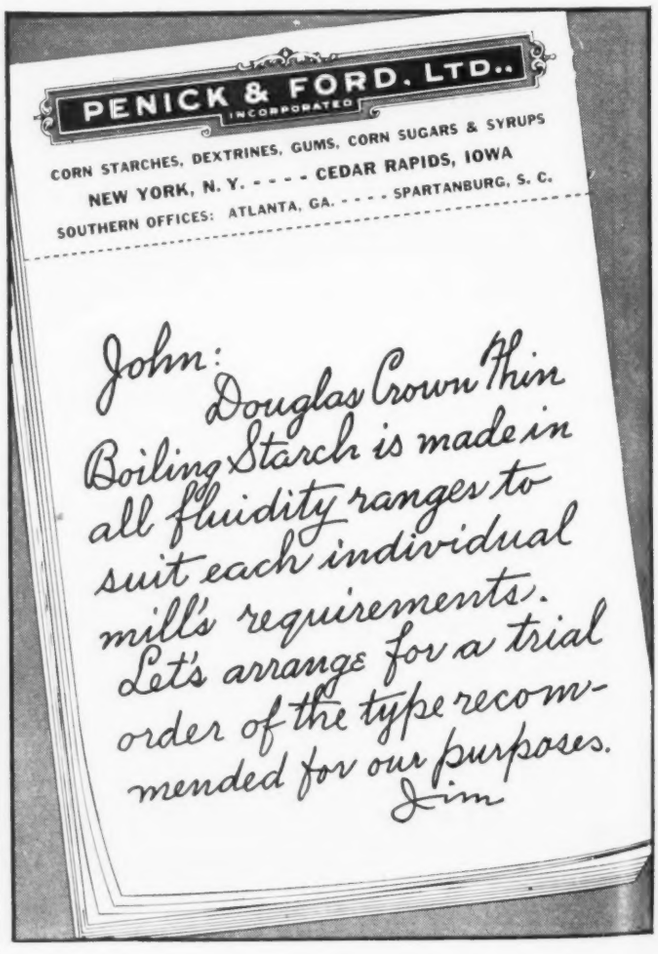
125 S. Third St., Philadelphia, Pa.

Chicago Sales Off.: Eng. Bldg.

Distributors in Over 60 Cities

Nine Plants

PQ SILICATES OF SODA


PENICK & FORD, LTD.
INCORPORATED
CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS
NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA
SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.
John:
Douglas Crown Thin Boiling Starch is made in all fluidity ranges to suit each individual mill's requirements. Let's arrange for a trial order of the type recommended for our purposes.
Jim

RAPIDASE

THE PREFERRED DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems—
our technical men are at your
service . . . Write or 'phone.

WALLERSTEIN COMPANY, INC.
180 MADISON AVENUE, NEW YORK

HOW OAKITE CLEANING HELPS MILLS ECONOMIZE ON MAINTENANCE!

FOR EXAMPLE:

STEAM CLEANING SLASHER DRUMS THE FAST, LOW-COST OAKITE WAY

Unprecedented textile production has multiplied mill maintenance problems almost overnight! What can you do about it? Save time . . . conserve effort wherever possible. Clean slasher drums, for example, faster and more economically by using this performance-proved Oakite idea.

Simply apply recommended Oakite solution with the Oakite Steam Gun. Notice how deposits are removed quickly, thoroughly, easily! That is because Oakite steam cleaning provides an effective triple combination of heat, mechanical force and detergent action. Use this same method, too, for cleaning hosiery knitting machines, dye vats and kettles. Write today for FREE details.

OAKITE PRODUCTS, INC., 42 Thames Street, New York, N. Y.
Representatives in All Principal Cities of the U. S. and Canada

OAKITE Specialized **CLEANING**
MATERIALS · METHODS · SERVICE — FOR EVERY CLEANING REQUIREMENT

ONYX

VICTORY BEFORE ALL

Eternalure RAYON HOSIERY FINISHES

The quality finishing of Rayon and Cotton constructions is a sales must—today. Many outstanding names in American Hosiery depend upon Eternalure Superior Hosiery Finishes to make their productions look better, feel better and wear better.

Let Onyx technicians help you solve your finishing problems with Eternalure Superior Hosiery Finishes, particularly developed for the new Rayon and Lisle constructions.

For better hosiery—
use Eternalure finishes.

ONYX OIL & CHEMICAL COMPANY
JERSEY CITY, N. J.

New England Office: 511 Westminster Street, Providence, R. I.
Charlotte Office: 121 East Third Street, Charlotte, N. C.
Mid-Western Representatives:
Maher Color & Chemical Co., Chicago, Ill.; Los Angeles, Calif.
In Canada:
Onyx Oil & Chemical Co., Ltd., Montreal, P. Q., Toronto, Ont.

onyx

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EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

10 cents a word, minimum charge $2.00.

(See ¶ on Box Numbers.)

POSITIONS WANTED (full or part-time salaried employment only), ½ above rates.

PROPOSALS, 50 cents a line an insertion.

INFORMATION:

BOX NUMBERS in care of any of our New York, Chicago or San Francisco offices count 10 words additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED—RATE PER INCH:

The advertising rate is $6.75 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. T.W.

NEW ADVERTISEMENTS received by 10 A. M. May 28th will appear in the June issue, subject to limitations of space available.

FIXER

For Komet Machines WANTED

New England Hosiery Mill with Komet machines wants experienced mechanic for Scott & Williams Komet machines.

Steady employment, good salary. Apply

P-123, Textile World
330 W. 42nd St., New York City

POSITIONS VACANT

EXCELLENT OPPORTUNITY! For man with creative ability, to take charge sample making, cost calculation novelty twisted yarns. State experience and salary desired. Replies treated confidentially. Reply to P-64, Textile World, 330 W. 42nd St., New York, N. Y.

PLANT ENGINEER for complete supervision of maintenance department including installation and development work, thoroughly trained in handling mechanical, electrical and steam problems. Excellent position for one having proper qualifications. Give full details in application. P-126, Textile World, 330 W. 42nd St., New York, N. Y.

SUPERINTENDENT of small tapestry plant wanted. Man with full knowledge of jacquard work; pick and pick; 4 x 4 box looms making fine upholstering fabrics. Man must know how to take complete charge of plant and personnel. Write giving full particulars and experience. P-127, Textile World, 330 W. 42nd St., New York, N. Y.

EXPERIENCED SPINNER WANTED on coarse yarns. P-128, Textile World, 520 N. Michigan Ave., Chicago, Ill.

MECHANICAL SUPERINTENDENT WANTED. Large mill located in Northeastern Mass. Must have technical degree or equal; age between 40 and 50; experience in textile mills advantageous. Write fully regarding education, nationality, marital status, detailed work history including salary on each job and number of employees supervised. Small photo if possible. Your present employer not to be contacted without your consent. P-129, Textile World, 330 W. 42nd St., New York, N. Y.

POSITIONS WANTED

ASSISTANT SUPERINTENDENT 49, 20 years experience knowing perfectly french Drawing, Worsted Mules, frames, like to change, same position or overseer. PW-113, Textile World, 330 W. 42nd St., New York, N. Y.

NARROW FABRIC-SUPERINTENDENT designer, experienced on heavy Government webbing, tapes, bindings. PW-130, Textile World, 330 W. 42nd St., New York, N. Y.

WOOLEN SUPERINTENDENT

Desires change. Have held present position 11 years, in New England mill, thoroughly experienced in all of Woolen Mill, know Auto. looms, etc., wide knowledge of stocks, Blends, costs, etc. Experienced on Kerseys, Flannels, Shirtings, Cassimeres, Meltons, Mackinaws, etc., 36 years old, married, U. S. Citizen. Will go anywhere in U. S. Not office desk type, can produce results.

PW-118, Texile World, 330 W. 42 St., N. Y. C.

Over Forty Years of Dependable and Confidential EMPLOYMENT SERVICE

for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.

Phone: Liberty 6547 — 294 Washington Street, Boston, Mass.

POSITIONS WANTED

OVERSEER OF WEAVING, 35, with 20 years of practical New England mill experience on cotton and rayon novelties, sateens, twills and dobby weaves, etc., Adequate technical education. A good leader, teacher and manager. Draft deferred. Confidential interview desired. Apply PW-132, Textile World, 330 W. 42nd St., New York, N. Y.

POSITION WANTED

TECHNICALLY TRAINED TEXTILE MAN

Ten years' experience in all operations from yarn preparation to finished fabric, in cotton and rayon. Age 41, married. Graduate of leading European Textile College.

PW-121, Textile World
330 West 42nd St., New York City

WOOL SPUN YARN

Interested in buying or furnishing commission work for 3 to 6 set woolen mill or part of larger mill making or capable of making 2 ply even spun yarn 1½ to 3 run or finer. Must have A1 product. Would consider investing in good proposition. Unquestionable references furnished and demanded.

BO-119, Textile World
330 W. 42nd St., New York City

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL

Booklet—"General Information Concerning Inventions & Patents" and "Free Schedule" sent without obligation.

Established 1915

Patents—Copyrights—Trade-Marks

Suite 448, 815—15th St., N.W., Washington, D. C.

OSNABURGS & DENIMS

ENGINEERING CONSULTATION ON

Plant Changeover • Organization • Weaving • Operating Methods • Waste Utilization • Breaking Strengths, etc.

S. B. SCHWARTZ

Textile Engineers

1059 Constance St. — New Orleans, La.

WANTED

Operating woolen or cotton mill

Complete, spinning and weaving of average size, for purchase or lease. If woolen plant, finishing imperative. Would also consider acquiring at least half interest in such mill. Send full description and price.

BO-125, Textile World
330 W. 42nd St., New York City

For Sale

INTEREST IN BICK & CO., Inc.

Mfgrs. of Dyestuffs & Chemicals
Reading, Pa.

Contact, CARL E. BICK
Real Silk Hosiery Mills
INDIANAPOLIS, INDIANA

WANTED

Wanted!

Extractors, 30" to 60"
Nash Vacuum Pumps, all sizes
Motor driven Centrifugal Pumps
Storage Tanks
Colloid Mills
Air Compressors

We have active calls for all the above. Send full details together with best cash prices.

BRILL Equipment Corp.
183 VARICK STREET NEW YORK

TWISTERS WANTED

Manufacturer wishes to buy 10 3½ inch novelty double roller twisters—tape drive. Advise full details.

W-131, Textile World
330 W. 42nd St., New York City

Wanted—At a Price

Two—20 Spindle **Cotton Balling Machines**
And
Two—16 Spindle **Worsted Balling Machines**

Give description and price.

W-124, Textile World
330 W. 42nd St., New York City

We offer the following from our Partial List

1—42" King & Gerber 3 roll Calender with 3/60/220 v. motor.
1—48" Farmer 6-bowl Calender
1—50" Van Vlaanderen 3-roll Calender
2—sets 3-cyl. Furbush Woolen Cards 48"x60" camel back feeds Barker condensers
1—60" V V Doubling, Tubing & Measuring Mche.
1—set of 10 Textiles 23"x60" Dry Cans, vertical frames
1—set 23 Lincoln 88" Face Copper Dry Cams, Horizontal Frames
1—150 yd. Kenyon Return Tenter Dryer 65" opening
2—84" Proctor & Schwartz Loop Dryer
1—Hurricane Loop Dryer, 7'8" wide x 34'2½" long x 6'3½" high, inside dimensions
4—4000 gal. C.I. Chain Warp Dye Vats, Butterworth & Textile Fin. Mchy. Co.
1—20 lb. Rochester All Monel Metal Pocket Rotary Hosiery Dyeing Mach. mtr. dr.
1—56 Arm Mayoux Skein Dyeing Machine driven with monel and copper tanks
1—30" Hercules motor driven Extractor
2—42" Hercules, Stainless Steel Baskets, V-Belt, mtr. dr. Extractors, Timers, Safety covers.
1—60" wide, 3-cyl. 30" dia. Garnett, automatic.
3—Schultz Fulling Machines
35—S&W Mod. K Knitters, 48 gge. 3" to 3½" 160 to 220N. with attachments
96—42" Draper Model K Auto. Looms, 20 h. mtr. dr.
21—56" C & K 4x4 Box Looms with 600 hook Jacq. Hds. belt driven
18—56" Eastwood 1x1 Looms with 600 hook Jacq Hds. belt driven
12—72" C & K (4x4) Tapestry Looms with 1300h Jacq. mtr. dr.
30—82" C & K 4x1 Auto Looms 25 harness mtrized.
3—92" C & K 4x1 Box Automatic Looms, 20 harness head, warp stop motion, mtr. dr.
10—92" C & K 4x4 Box Looms
100—92" Draper Model L automatic Looms, belt driven
4—120" C & K (4x4) 25 harness Looms
1—65" Van Vlaanderen Palmer
1—50" Morrison Triune Finishing Mach. Quetch Palmer Tenter
1—66" V. V. Palmer Quetch Unit
1—67" Morrison Palmer with 2-roll Quetch
2—1-65"; 1-66" Rotary Cloth Presses
1—8 color Van Vlaanderen Ribbon Printer
1—42" Rice, Barton & Fales, 7-color Prtg. Mche., Dry Cans, etc.
1—43" Rice, Barton & Fales 8 color Prtg. Mach., Dry Cans, etc.
1—54" Textile Mach. Co. 8 color Prtg. Mach. complete with 2—G.E., 35 HP mtrs.
1—52" Waldron 12 color Printing Mach., complete with Westge slip ring, motor, 50 HP.
2—20 Sp. ±90 Universal Quillers No Bunch Builders without motors
19—144 Sp. Saco Pettee 8x4 Roving Frames
2—60" Smith & Furbush Shredders
1—Saco Lowell 2 cyl. slasher & warper, 1919
1—66" Johnson 5 cyl. Slasher (cotton system)
1—Saco Lowell Slasher, 58" face, wi Size Box
1—90' W. & J. Clip Tenter 50" mtr. dr.
1—Pair of 60" Squeeze Rolls
10—96 Spindle Draper 4" Ring, 5" Gage, Tape Drive Twisters, M. D.
3—28 Sp. F&J Novelty Twisters with mtrs.
150—128 Sp. Fletcher Dble Deck Upstroke Twisters, 7" Sp. spacing, equip. with 2-3 HP mtrs.
8—192 spindle Whitin Wet Twisters 2¾" gge.
7—160 Sp. Collins Double Feed Roll Novelty Yarn Twisters, motor driven
7—18 Sp. Oswald Lever Bottle Winders, mtrs.
1—80 Sp. Foster Model 12 Tube Winders with Drive Shaft Motor
1—40 Sp. Lindsay Hyde Coreless Cop Winder

Write, wire or cable your requirements today

To the NEW Buyers of USED Equipment:

THIS advertisement is specifically addressed to the many mills who have not bought used textile machinery before but who find it necessary to consider doing so now in order to meet current war-production demands associated with war needs.

You undoubtedly approach this new buying problem with one question overshadowing all others and that is: Who to deal with? This advertisement is intended as a partial answer to that question. You can deal with Machinery Liquidating Co., Inc. with confident assurance that you will get machinery that is exactly as represented, at the price quoted and delivered when promised. Machinery Liquidating Co., Inc. does not invite your consideration as the only reliable dealer in used textile machinery. But it believes that our 16 years' experience, our host of satisfied customers and a well-earned reputation for reliability are substantial evidence of the assurance you would like to have in placing your orders for used textile machinery. We submit this partial list of machinery currently available. Other items in our stock may cover your needs. If not we will gladly undertake to locate them for you.

MACHINERY LIQUIDATING CO., INC.

Over 16 years in textile mill machinery

31-33 W. 42nd ST. **NEW YORK, N. Y.**

Telephone: PEnnsylvania 6-8014

DOMESTIC AND EXPORT

CABLE ADDRESS "LIQUIDATE," NEW YORK

INSPECTORS . . . APPRAISERS . . . LIQUIDATORS

FOR SALE

CARDING AND SPINNING MACHINERY

1—Sargent 36" Multiplex Burr Picker
2—Schofield Rag Pickers
1—6'6" Sargent Cone Duster, Metal Ends
2—48" C. & M. Fearnaught Mixing Pickers
1—36" C. & M. Mixing Picker, Atlas type
1—F. & J. 80 sp. 4" Ring Twister, tape driven

WARPING AND WINDING MACHINERY

20—#50 Universal Winders "Rebuilt" to your order
50—#90 Universal Winders "Rebuilt" to your order
5—#180 Universal Super Coners
1—40 spindle O. Lever Cop Winder
4—72" to 100" Pin and Pinless Warping Mills
12—Beaming Frames various widths
4—378 spindle Whitin Quillers
1—100 spindle #101 Foster Tube Winder
1—32 spindle F. & J. 3½" Ring Twister
5000—4" x 6" Twister Spools
50,000—Wood Spools 4" x 6"

WEAVING MACHINERY

200—C. & K. 50" Automatic Looms, 25 har. doubles, motor drive
10—82" C & K. Looms, 4 x 4 box, 25 har.
2—O Lever Chenille Cutters
1—60" Hook Royle Card Cutter, Piano type

DYEING AND FINISHING MACHINERY

1—Gessner Heavy Duty Jumbo Press
1—80" D. Gessner Century Cloth Press
2—66" Voelker Cloth Press, late type
1—72" Gessner Century Press
1—78" C. & M. 2 cyl. Brush with steamer
1—P. & W. 66" Plush Shear
1—C. & M. 66" Plush Shear
4—Model A. P. & W. 66" Double Shear
1—66" Model B, P. & W. Double Shear, list saving
3—C. & M. 66" Double Cloth Shear
2—Kettling & Braun 72" Plush Shears
3—A. T. & M. Co. Underneath driven Extractors 36" to 54"
3—80" Woonsocket 20 roll Double Acting Nappers
1—60", 2 cylinder P. & W. Steamer and Brush
1—E. & H. Yard and Quarter Folder 66"
1—C. M. 64" two Burner Singer

FRANK W. WHEELER
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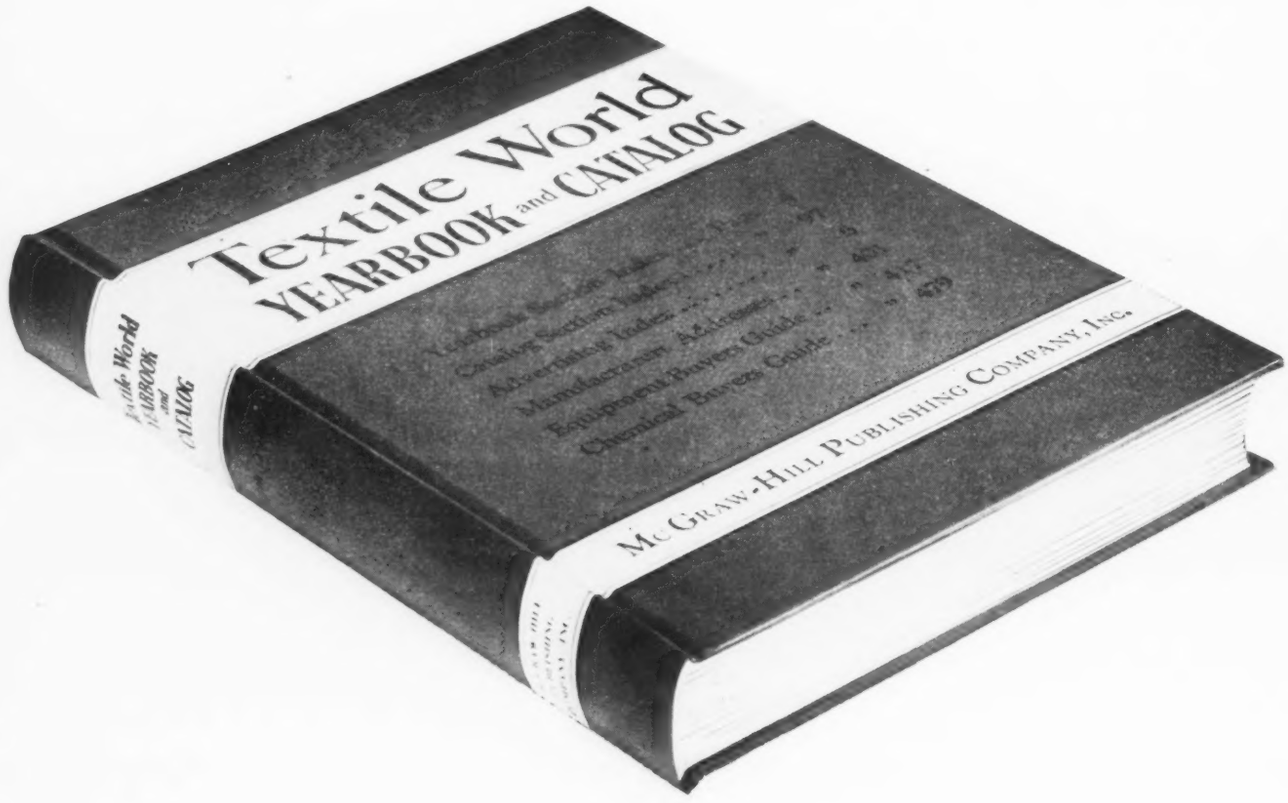

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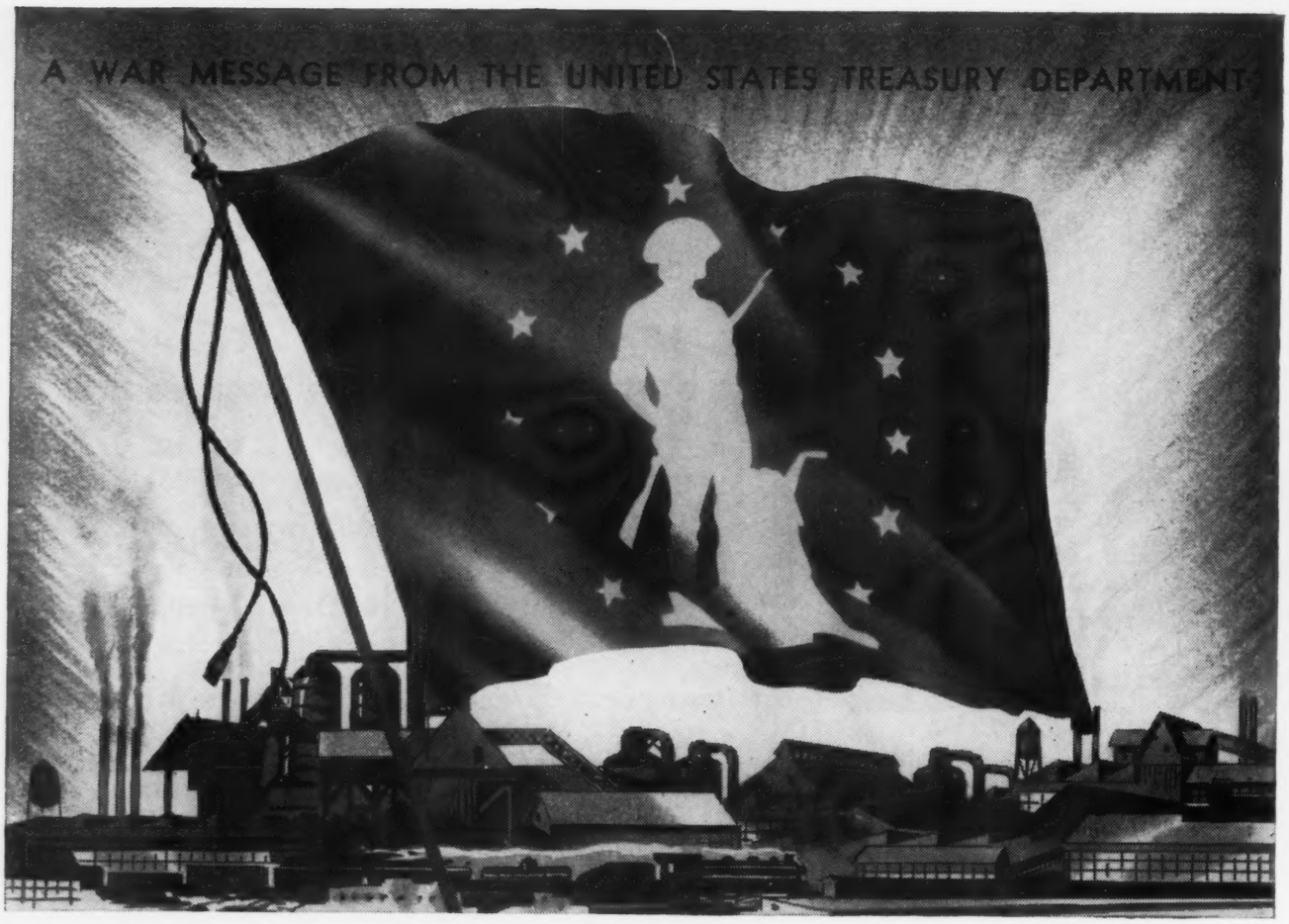

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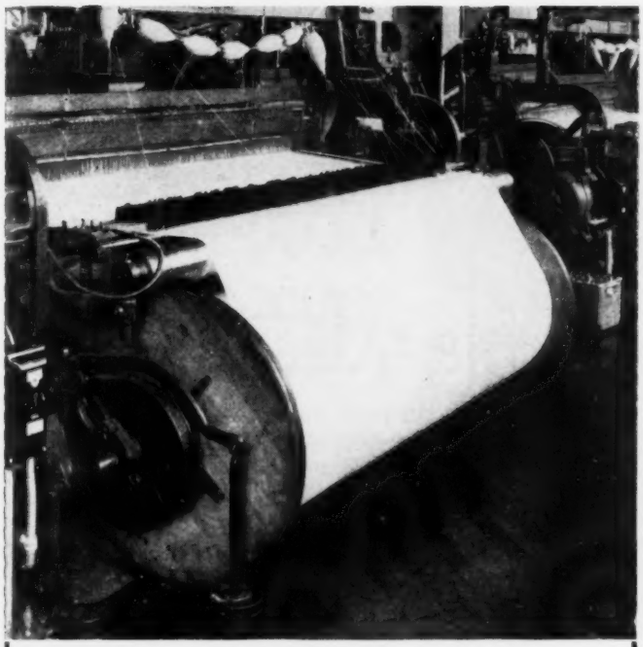

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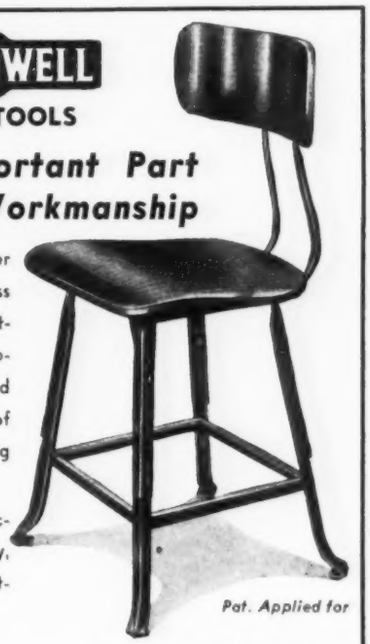

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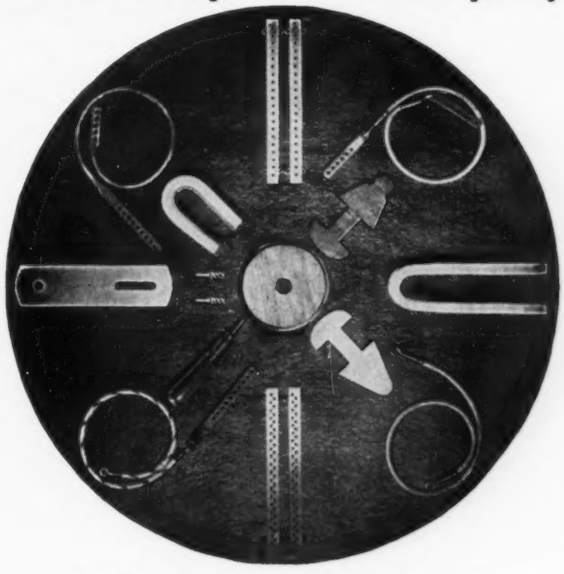

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